

The urban dipoles of Thessaly

Experts Report (v. 3)

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Introduction

This is the Report of the expert studies which have been assigned to St. Tsakiris and K. Lalenis for the Regional Development Fund of Thessaly, and concerns the urban dipoles of Thessaly, as they have been proposed by the statutory Regional Framework of Spatial Plan and Sustainable Development of Thessaly. The aim of the study is to establish the feasibility and the preconditions of functioning of urban dipoles in Thessaly, with a focus upon the dipole Larissa-Volos, as well as the support of a relevant workshop and a conference.

The report has been edited by a scientific team, whose main components are the following:

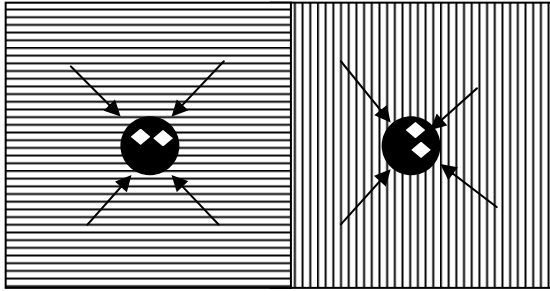
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The strategy of urban dipoles

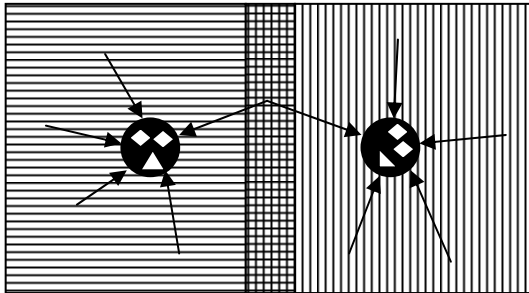
Introduction to urban networking and the concept of dipoles

Networking, as an organising principle of the systems of cities, is a basic feature of the territorial realities, but also a classic concept of the theory of urban geography and of spatial planning, as for instance in the case of Vidal de la Blache, Christaller or Isard. In the first place it refers to the fundamental characteristic of cities and towns, that is that they do not constitute isolated and autonomous points of concentration of population and activities in the space, but they generate and attract flows, which are orientated to other cities or the countryside. The parallel concept of “hierarchy” in the interior of the system of cities, which is connected to the existence of urban centres—and functions—of different rank, implies also the notion of complementarities, since among urban centres of different rank asymmetrical relations are created. These relations are, in their turn, associated with different albeit linked roles, and lead to interdependence. The spatial expression of these interdependencies is the **system of cities**.

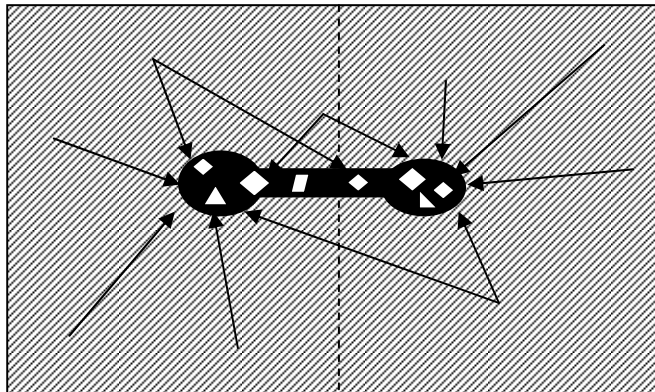
The urban functions which are the main motors of the above scheme are the so-called “**central place functions**” or “central functions”. These functions tend by nature to be distributed in space according to hierarchical ranks and, correspondingly, hierarchically ranked hinterlands (service areas), in whose centre they are located. Typical functions of this type are commerce, the social services and administration. The central-place functions lead to the creation of urban systems, whose nodes (that is cities and towns) tend—especially when the wider territory is a flat uniform plain (isotropic)—to be spatially distributed with a geometrical regularity. Cities of the same rank normally have the same distance between them, and serve hinterlands of the same range which are not overlapped.



Two neighbour cities which belong to the same rank of a classic urban system: same central place functions, similarity of roles, equal but distinct hinterlands



Two neighbour cities which belong to the same rank of a classic urban system, but develop special functions: same central place functions, similarity of roles, but overlapping hinterlands as far as the special functions are concerned



Two neighbour cities which form a dipole: the dipole is situated on a higher rank in the urban system, and has a semi-unified hinterland as far as the higher functions (both central and special) are concerned.

The central place functions were in the base of the urban phenomenon since its beginning. A very different kind of urban functions are the **special functions**. This term refers to functions which are carried out for non-local, non-contiguous areas, and are located according to the random fixed spatial distribution of specific resources, usually natural or geographical ones. Such functions, as extractive industries or tourism, are attracted where these specific resources pre-exist. The contact with the final consumer is made either with the export of the product or by the travel of the consumer. The special functions, whose systematic appearance is more recent than that of the central functions, tend to superimpose to the latter, and—because of their different locational model—to modify the systematic spatial pattern of the traditional, “central-place” based, system of cities. For instance, a city of high rank and a settlement of low rank in the central-place hierarchy may both develop very important special functions, if it happens that they possess the relevant natural resources (see the case of tourism). As a consequence, the growth of the special functions flawed the orderliness of the systems of cities, permitting, for instance, the existence of big cities in small distances and/or the overlapping of their hinterlands.

A more recent term than the urban system or system of cities is that of the “network of cities”. This term suggests a policy option, which has been promoted by the European Commission since the middle 80s, and consists in the co-operation of towns—usually in great distance between them and not belonging to the same urban system—based not on functional complementarities but on similarity, and aiming to the exchange of experience regarding the solution of similar problems. Sometimes, these networks evolved to lobbies seeking the promotion of common interests and the influence upon the policies of diverse polities, such as the European Union. It is obvious that the networks of cities of this kind are not hierarchical but, on the contrary, are constituted by partners of similar weight who deliberately try to collaborate (a very different situation from the system of cities, the participation to which is not a matter of choice but an inevitable product of the law of spatial economics).

The concept of urban **dipoles** fit in the tradition of the networking, comprising elements both from the classic hierarchical urban systems and the recent networks of peer towns. It presupposes, in the first place, two centres which belong to the same urban system, and have a similar order in the system, serving equivalent hinterlands. As a consequence, the two cities are playing similar roles regarding the central place functions. However, when these two cities also contain, or develop, (usually different) special functions, their profile can be also relatively differentiated: their common factor are the central functions, their discriminating factor are the special functions. More over, the existence of special functions makes possible (the matter is depended upon the geographical position of the fixed resources which support the special functions) that the two cities be more close than what would be expected by the sole influence of central place functions. If this happens, the corollary is a gradual intersection of the hinterland, with the creation of an intermediate zone that tends to be served selectively by both cities.

When this phenomenon appears, a possible evolution is the more strong connection of the two cities, which will start to “share” some of their central functions, and this can result to a more pronounced intersection of the hinterlands and eventually to an intermediate zone with a magnitude that exceeds that of each former hinterland alone. This consequence involves the possibility of the emergence of new central place functions, of a higher rank than those that existed in the two cities in the previous historical phase. Such an occurrence has, evidently, and other aspects. The two cities are apt to develop spatially by approaching to each other, while the area between them will be subjected to urbanization forces, with the result that the pair of the cities—actually a dipole—will attain a not only functional but also physical existence, with the creation of a complex urban structure. The two cities may, more or less, maintain a semi-autonomous physical identity, and the axis which links them may retain not built-up and even natural segments—in other words the spatial form of the dipole is not predetermined—but on a structural level a new urban entity will have been created. Moreover, the facilitation of movements and contacts in the interior of the semi-unified hinterland will amalgamate the markets (of labour, of land etc.) and will create economies of scale and of urbanization for the central functions and, possibly, for some special functions.

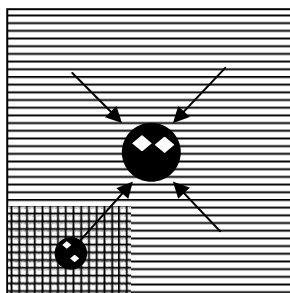
On the whole, the phenomenon of dipoles leads to conditions that are better for both the “original” cities, from the points of view of economic growth, competitiveness, and level of services and infrastructure.

In order to complete the above analysis, some other related issues must be tackled:

1 Is the advent of comparable processes possible among more than two *similar size* cities? Such a thing may not be excluded on principle, but obviously the nodes of a multi-polar urban structure cannot exceed a small number, for reasons of proximity and of carrying capacity of the wider area of the “multi-pole”: it is not feasible that many cities of a similar size coexist in the same area at the start of the emergence of the phenomenon, because this is contrary to the mode of spatial organization of the hierarchical urban systems, from which the phenomenon of the dipole arises. As a consequence, the creation of a “tri-pole” or maybe a “tetra-pole” is not to be excluded, but such patterns with a greater number of poles are not unlikely.

2 The emergence of a dipole is independent of the original size of the cities? That is, is it possible that this phenomenon will span different ranks of an urban system? The answer will be usually negative. The reason is that the fundamental factor of the integration of a dipole is the existence of economies of scale and concentration. These externalities require a minimum threshold (critical mass), and they don’t arise simply by the combination of two hinterlands, or markets, of a lower rank. The achievement of a new level of magnitude is far more probable between cities/hinterlands of a rather large original size, than between small towns. Therefore, the creation of dipoles between cities of lower ranks is not probable. However, some of the processes of the first phase of the creation of a dipole are possible even in this case, and can lead to linkages between small sized towns stronger than what is expected to “simple” central-place type urban systems. Such stronger networking can create small local systems, which share *some* central functions, in a way that does not occur normally through market forces, and for this reason, systems of this type are usually based upon administrative functions and are promoted with the aid of planning.

3 Another obvious question is whether analogue processes can occur between cities of different rank. With the literal sense of the concept of dipole, this is hardly feasible—in the first place because this is a situation where no distinct hinterlands exist; on the contrary, the



hinterland of the smaller centre is a subset of that of the higher centre (at least if the two centres are neighbor, otherwise the creation of the dipole is out of question) and, regarding the higher rank functions (those that don’t exist in the smaller centre), it is served by the latter. In this case, hence, there is by the beginning a hierarchical relationship between the two cities, while there is no room for the emergence of equivalent complementarities (that is, of a redistribution of the higher functions between the two cities, with both being, in principle, capable of containing them). Moreover, the creation of economies of scale, generated by the merger of two different service areas, evidently is not possible. Therefore, the creation of dipoles between cities of different rank is not probable. However, some of the processes of the first phase of the creation of a dipole are possible even in this case, and can lead to links between cities of different size stronger than

what is normal in usual urban systems. This is achievable through a *voluntary* spatial localization of some central functions, which—as in the previous case—is especially possible regarding functions whose location is a responsibility of the public sector. Ένα άλλο προφανές ερώτημα είναι κατά πόσον αντίστοιχες διαδικασίες μπορεί να προκύψουν μεταξύ πόλεων διαφορετικών βαθμίδων. Δίπολο με την κυριολεκτική έννοια του όρου μεταξύ πόλεων που ανήκουν σε σαφώς διαφορετικές βαθμίδες είναι δύσκολο να υπάρξει, πρώτα-πρώτα γιατί στην περίπτωση αυτή στην αρχική κατάσταση δεν υπάρχουν δύο όμορες αλλά διακριτές ενδοχώρες. Αντίθετα, ήδη η ενδοχώρα του μικρότερου κέντρου αποτελεί υποσύνολο της ενδοχώρας του ανώτερου κέντρου, από το οποίο εξυπηρετείται για τις λειτουργίες υψηλότερης βαθμίδας (αυτές που δεν υπάρχουν παρά μόνο στο ανώτερο κέντρο). Συνεπώς, στην περίπτωση αυτή υπάρχει εξ αρχής μια ιεραρχική σχέση μεταξύ των δύο πόλεων (μεγάλης και μικρής), ενώ δεν υπάρχει πεδίο για την ανάπτυξη ισότιμων συμπληρωματικότητας (ανακατανομή των κεντρικών λειτουργιών στη μια ή την άλλη πόλη, με δυνατότητα και των δύο να τις υποδεχθούν).

Objectives and prerequisites for the emergence of urban dipoles

The above analysis permits the examination of the basic strategic issues for the emergence of urban dipoles: the objectives of such a strategy and the prerequisites of the creation of dipoles (either preexisted or promoted through deliberate intervention).

The objective of the creation of dipoles is, on a first level, the promotion of externalities—economies of scale and economies of urbanization. In a dipole there is a considerable augmentation of the internal market (roughly, there happens in the start of the process a doubling of the market, while later the increase can be larger, through multiplicative effects). This allows for the existence and use, by both cities, of specialized equipment and services which either were not viable in the original cities separately (especially in the case of market activities) or existed but operated on a sub-optimum level (especially in the case of public facilities). Correspondingly, the enlargement of the labour market allows for more differentiation and flexibility. Overall, these evolutions lead to the increase of productivity and competitiveness of the firms located inside the dipole. This—which is in particular true when the two original “poles” had already a relatively high rank in the system of cities—concerns both the central and the special functions, albeit in different ways, as is listed below:

- Administrative functions: possibility of localization of higher level activities, when the scale of the dipole results at its transfer on a higher rank of the urban system (public sector)
- (Higher) education and research: facilitation of the existence / creation of research centres, as well as of the increase of the size of the universities (public sector, possibility of private participation).
- Health: contribution to the viability of large integrated hospitals, which necessitate a big internal market, but from the moment that they exist they can also provide services to external markets. (public and / or private sector)

- Culture: equipment of high range and wider recognition, who presupposes a large audience, and operate not only in the field of culture but also as emblems of the region which enhance its supra-local (interregional or international) “visibility” (opera houses, big museums, great concert halls etc.), especially when this activities dispose also of a high architectural quality building. Such equipment can be a major component (“flagship” of a city-marketing strategy. (public sector, possibility of private participation)
- Transport, telecommunication and energy: contribution of the dipole to the economic viability of large infrastructure. Especially: (i) frequent rail connection (intra-dipole and external), (ii) regular air-flights (external connections), (iii) inter-modal transport systems, (iv) regarding energy, the contribution of the dipole concerns mainly the distribution networks and cost. (public and/or private sector)
- Organized areas (parks) for manufacturing industry, logistics etc. (private sector)
- Commerce: rare retail establishment (private sector)
- Special forms of tourism which need a metropolitan or a least fairly urban environment (congress tourism, urban tourism, golf resorts...)(private sector)
- Business services of high level (financial, consulting...)(private sector)

A fundamental prerequisite for the possibility of two cities to form a dipole is their mutual accessibility. It must be developed enough to facilitate daily commuting between the two “poles” (journey to work), as well other kinds of journeys (to services, to retail markets, etc.). Accessibility is based upon geographical conditions, but obviously these can be modified through transport infrastructure. This quality means that the possibility of creation of dipoles does not remains unchanged through time. On the one hand, it is connected to more general factors (transport technology...); on the other hand, it is depended upon planning decisions and interventions. Thus, two objective requisites for the creation of a dipole are: **(relatively) small geographical distance** and **adequate transport infrastructure** connecting the two poles.

A dipole can emerge by itself, if the objective prerequisites are present, through the action of the economic and spatial forces which has been examined above—when these forces are strong enough to produce major territorial transformations. When, however, these prerequisites exist but not at a level which could generate spontaneously this phenomenon, the creation of a dipole presuppose a conscious strategy which will adopt such an goal and will promote the necessary policy measures for its fulfillment. Such measures comprise, certainly, transport infrastructure, but also the creation of high level equipment in other sectors (R&D, culture etc.), the encouragement of complementarities (for instance specialization of each pole according to comparative advantages), as well else institutional arrangements. Therefore, apart from the objective requisites mentioned above, more “subjective” conditions may be crucial for the creation of dipole, as the existence of **political will**. To this, the **social acceptance** of the idea of the two cities forming a dipole must also be added.

Existing and programmed infrastructure and other pre-requisites for a “dipole” strategy in Thessaly

The geographical framework

The Region of Thessaly is situated at the eastern central part of continental Greece, also comprising some small islands. The continental part of the Region is in touch with the Aegean Sea at the east, and borders with the Regions of Western and Central Macedonia to the North, the Region of Epirus to the West, and the Regions of Western and Central Greece to the South. It is surrounded by mountains and hills, which enclose a unified internal plane zone, which contains the majority of the population and economic activities. This configuration, almost unique among the Greek regions, gives to Thessaly an unusual geographical cohesion (Map 2).

The position of Thessaly from the regional development and spatial planning views

With a population of 753.888 (2001) which corresponds to 6,9% of the total Greek population, Thessaly ranks to the third place of the Regions of the country from this point of view. As far as spatial position is concerned, the main feature of Thessaly is its central place as well as the fact that it is crossed by the main post-war development axis of Greece, the axis Athens-Thessaloniki. The Region is not directly adjacent to two *emerging* growth axes, that is the “northern” axis which is expected to gain importance with the completion of the Egnatia Road and the intensification of economic relations of Greece with the countries of the Balkans, and the (future) “western” axis Igoumenitsa-Patras which is expected to capitalise the profits from the contact with the Western Europe. However, both these axes are situated in small distances from the borders of Thessaly, and its connection with them is feasible, with the construction of relevant transport infrastructure. (Map 2)

GDP per capita in t is less than the national average, representing 90% of the latter (2002). The economic base of the Region is still (2001) excessively depended upon agriculture, which contains 27,9% of the total employment, with a secondary sector participation of 19,4% and a tertiary sector of 49,6%¹. In addition, the unemployment rate is one of the more pronounced in Greece.

¹ The 3,1% of the employees has not declared economic branch.

The active population of the four bigger urban centres² of Thessaly, as well as their specialization³ in two basic urban activities on 2001, were as follows:

	Active population	Manufacturing industry		Tourism	
		LQ	Comment:	LQ	Comment:
Volos	33.791	1,20	specialization above average	1,004	specialization slightly above average
Larissa	53.458	1,27	specialization above average	0,83	relative absence of the activity
Karditsa	15.517	0,68	relative absence of the activity	0,96	relative absence of the activity
Τρίκαλα	21.443	0,73	relative absence of the activity	0,73	relative absence of the activity

LQ: Location Quotient

The two bigger cities are characterized by one (Larissa) or two (Volos) specializations.

Thessaly—as Greece as a whole—is situated in the margin of the European Union (EU) territory (Map 1), and has (2001) a GDP per capita equal to 66,1% of the EU25 average (EU 2004). Thus, Thessaly is considerably lagging behind. Still, a beneficial side-effect of this negative situation is that the Region will still be eligible for full-skill community financial aid during the next programming period 2007-2013, which could facilitate the financing of policies and development programs.

A concise account of the strong and weak points of Thessaly is presented in the following SWOT analysis (EYDE PEP of Thessaly 2005a):

² For the structure of the system of cities, see below.

³ Specialization is measured with the use of “location quotient” (LQ). LQ is a coefficient that compares an area’s percentage share of a particular activity with its percentage share for some basic aggregate—in this instance the total employment. The higher the value of LQ (above 1) the greater the degree of specialization in the activity in question.

POLICY AXES	STRON POINTS	WEAKNESSES	OPPORTUNITIES	THREATS
Competitiveness	Significant increase of high quality agricultural production (COD, bio-products etc.) and tourism and agri-tourism facilities	T Low growth level and lack of adequate growth dynamism	Maximization of the efficiency and absorption rate of financial resources over the present and next programming period	Lingering in a low growth level in the EU25 framework, after the end of the next programming period (2003)
	Apparent trend of development of European, national and regional networking and co-operation among private firms and public bodies	High share of (especially traditional) agriculture in the economic base, with a excessive dependence upon EU financial aid	Extended productive farmland and rich agricultural and cultural tradition	Rapid contraction of agriculture without alternative options
		Lack of industrial momentum	Industrial tradition, as in the branch of food-production	
		Very low level of economic services (R&D, financial...) and very weak penetration of the Information Society technologies	Support of the existing trend towards new forms of tourism	Prevalence of the traditional Greek tourism development model, which destroys in the long run the environmental and tourist resources
Accessibility and general economic interest services	Supra-local road and rail infrastructure, modernization of airports, creation of natural gas network	Geographical barriers towards NW and W that impedes communications, Lack of organized areas for the localization of firms (industrial parks, logistic centres...)	Nodal position from the geographical, and partly from the transport, points of view, possible connection to Egnatia Road and Igoumenitsa Port, development of broadband telecommunication networks	
Improvement and	Remarkable natural and man-made	Problems of water resources man-	Use of environment-friendly pro-	Inability to fulfill the obligations arising

POLICY AXES	STRON POINTS	WEAKNESSES	OPPORTUNITIES	THREATS
protection of the environment	environment in the mountains and in the islands	agement, pressures upon land-use and the environment, deficiency of environmental infrastructure, problems of urban planning and environment	visions of the new Community Agricultural Policy, Move towards organized areas for the localization of firms (industrial parks etc.) Take advantage of the grow potential of dipoles	from EU Directives regarding environmental protection (waste disposal, Natura 2000 network...)
Development of human capital, and promotion of employment	Adequate human capital, in comparison with the national average conditions	Demographic weakness, negative quantitative and qualitative features of unemployment	Social integration of immigrants	Entry in a phase of structural net population decrease
Improvement of the managerial skills of public administration		Deficiencies of public and local-government administration (staff, know-how...) at local, regional and national levels	Exploitation of the Information Society for the modernization of both public and private sector, activation of the existing legal framework for spatial and urban planning (L. 2742/99, L. 2508/97)	
Inter-regional co-operation			Participation in trans-European co-operation, and increase of the Greek penetration to the Balkans	Geopolitical problems in the Balkans or the Near East
Other special axis		Intraregional imbalances of several kinds: East-West, mountain-lowlands, town-countryside, intra-		Reinforcement of the intraregional imbalances

POLICY AXES	STRON POINTS	WEAKNESSES	OPPORTUNITIES	THREATS
		city inequalities etc.), which, nevertheless, are relatively reduced		

The system of cities and settlements

The system of cities and settlements of Thessaly comprise five orders of centres (cities, towns, and minor settlements). The configuration of the four upper orders is as follows (see also Map 4).

S e t t l e m e n t s				
1 ^{ou} order	2 ^{ou} order	3 ^{ou} order	4 ^{ou} order	
Larissa	Farsala		8 settlements	
		Farsala	3 settlements	
		Ayia	2 settlements	
		Elassona	7 settlements	
		Tyrnavos	1 settlement	
		Gonnoi-Pyrgetos	2 settlements	
	Volos(-New Ionia)		Αμπελάκια	8 settlements
		Velestino		
		Almyros-Efseinoupoli	3 settlements	
		Zagora-Argalasti	6 settlements	
	Karditsa	Skopelos-Skiathos	1 settlement	
			9 settlements	
		Palamas	1 settlement	
	Trikala	Mouzaki	3 settlements	
		Sofades	4 settlements	
			9 settlements	
		Kalambaka	7 settlements	
		Farkadon	1 settlement	
		Pyli	4 settlements	

The human settlement system in Thessaly is characterized by two features, which are not typical of the rest of the Greece:

The majority of the settlements are spatially distributed with a regularity which brings in mind the central-place theory. The centres of the same order tend to have between them comparable distances, with the corollary that their hinterlands are also of similar size.

There are five cities (settlements over 10.000 habs): the four prefecture capitals and Farsala. Inside the former group, Larissa, which is the headquarter of the Region and the capital of the Prefecture of Larissa has (2001) a population of about 125.000 habs and Volos, the capital of

the Prefecture of Magnesia has a population of about 115.000 habs⁴. Thus, these two cities are included among the few (four) major Greek cities under the metropolises of Athens and Thessaloniki (the population range of these major cities between 100.000 and 160.000). The other two Prefecture capitals, Trikala (Pref.: Trikala) and Karditsa (Pref. Karditsa) have, respectively, a population of 48.000 and 32.000 habs.

Transport infrastructure and patterns

The supra-local **road network** of Thessaly comprises the roads that connect the Region to the main growth centres of Athens and Thessaloniki, the bordering Regions, as well as the roads that interconnect the four prefectural cities. The main roads are the motorway Patras-Athens-Thessaloniki (PATHE) and the branches Trikala-Grevena, Lamia-Farsala-Larissa-Kozani, Volos-Larissa-Trikala, Volos-Mikrothives, and Neo Monastiri-Karditsa-Trikala (Map 6).

Regarding supra-local traffic, problems exist mainly in the entries of the four major cities on distances of about 5-10 km around them. The table below presents the Yearly Average Daily Flows (YADF) along the main roads (with the exception of PATHE as the flows at this motorway does not concern only Thessaly):

ROADS	YADF*1993	YADF 2000
Volos-Velestino	9.045	12.261
Velestino-Larissa	1.835	4.329
Larissa-Trikala	4.946	4.435
Trikala-Kalambaka	8.586	8.906
Kalambaka-Mourgani	3.240	3.963
Mourgani-Metsovo	2.252	3.587
Mourgani-Grevena	1.354	561
Neo Monastiri-Farsala	1.887	1.267
Farsala-Larissa	1.452	1.133
Larissa-Tyrnavos	9.357	9.238
Tyrnavos-Elassona	3.869	3.573
Elassona-Kozani	2.434	1.839
Volos-Mikrothives	2.946	2.436
Mikrothives-Farsala	1.197	1.276
Neo Monastiri-Karditsa	3.648	3.087
Karditsa-Trikala	6.067	5.917
Karditsa-Karpenisi	257	174
Larissa-Itea	3.975	4.115
Itea-Karditsa	4.236	4.405

*YADF: Yearly Average Daily Flows (2000: estimation)

⁴ Larissa is a unified local-government unit, while the city of Volos is actually divided in some five such units.

Regarding the **railroad** network, besides the national axis North-South which passes through Larissa, there are four lines of regional importance, of whom solely the first one is in regular use:

- Volos-Larissa
- Palaiofarsalos-Kalambaka
- Palaiofarsalos-Volos
- Volos-Milies

The main **port** in the continental part of Thessaly is the one of Volos, with considerable capacity and supra-regional role, both for passengers and freight. There are also some private ports belonging to big industrial firms, while the remaining ports are of purely local significance.

In the continental part of Thessaly, there are the following **airports**:

- Nea Anghialos (military-civil)
- Larissa (military-civil)
- Stefanovikeio (military)

However, it must be stressed that there are no, no, regular flights to / from Thessaly, and the civil use of the above airports is limited to charters flights. This represents an important obstacle to the development of activities that needs rapid connections with the rest of the Greece or with abroad.

Other networking technical infrastructure

Besides transport, other technical infrastructure useful for the networking of cities, which already exist in Thessaly, are the following:

- Three national level electric energy transfer lines (Kardia-Larissa-Larymna, Agios Dimitrios-Larissa-Larymna and Kardia-Trikala-Distomo). Also, the central national natural gas pipeline (Thessaloniki-Athens), which pass near Larissa and has a side-line to Volos.
- The telecommunications network (OTE) is already developed enough to cover the needs of the Region, on a level better than the national average. This network permits, up to a point, the development of broadband services and connections ISDN or DSL.
- The environmental infrastructure presents deficiencies, regarding solid waste management etc., but quite a few environmental equipments are under construction or programmed, which will reduce the deficit.

Large productive facilities

The large productive facilities, in the form of industrial parks, are few, but are located near the major cities (Industrial Park of Volos: 311 Ha, 22 firms; Industrial Park of Larissa: 182 Ha, 41 firms; Industrial Park of Karditsa: 43 Ha, no firms yet). The construction of a major logistics park was programmed under the current Regional Operational Programme 2000-2006 but eventually was not implemented, due to institutional difficulties.

Large social facilities of supra-local scope

The units of social facilities of important (supra-prefectural) scope in the four major cities are the following:

	Larissa	Karditsa	Trikala	Volos
<i>Health</i>	General Regional Hospital, University Hospital			
<i>Education-R&D</i>	Some University departments, Technical 3rd level School (TEI)	One University departments, some departments of Technical 3rd level School (TEI)	Some University departments	Site of the University of Thessaly, International Transport Research Centre
<i>Culture</i>	Library, Municipal Theater, Municipal Gallery			Municipal Theater, Symphonic Orchestra, Arts Centre, Museum, Municipal Gallery
<i>Justice</i>	2 nd level (appeal) Court			
<i>Security</i>	Regional Firebrigade Division, Regional Police Division			Port Organization, Central Greece Custom house
<i>Administration</i>	Headquarters of the General Secretary of the Region of Thessaly 10 supra-prefectural divisions	5 supra-prefectural divisions	2 supra-prefectural divisions	8 supra-prefectural divisions
<i>Sports</i>				"Panthessalikon" (all-Thessaly) Stadium

Institutional and administrative organization and conditions

Administrative organization

Thessaly is one of the 13 Administrative Regions of Greece, with the General Secretary headquarters located in Larissa. It is divided into four Prefectures⁵ ("Nomos"), of Larissa, Magnesia, Karditsa and Trikala and 104 1st level Local Government Units. It must be added that Larissa has been appointed as the site of the new programmed "Super-Region", which will be instituted in the next year, and will comprise the Administrative Regions of Thessaly,

⁵ Since the middle '90s, they are 2nd level Local Government units.

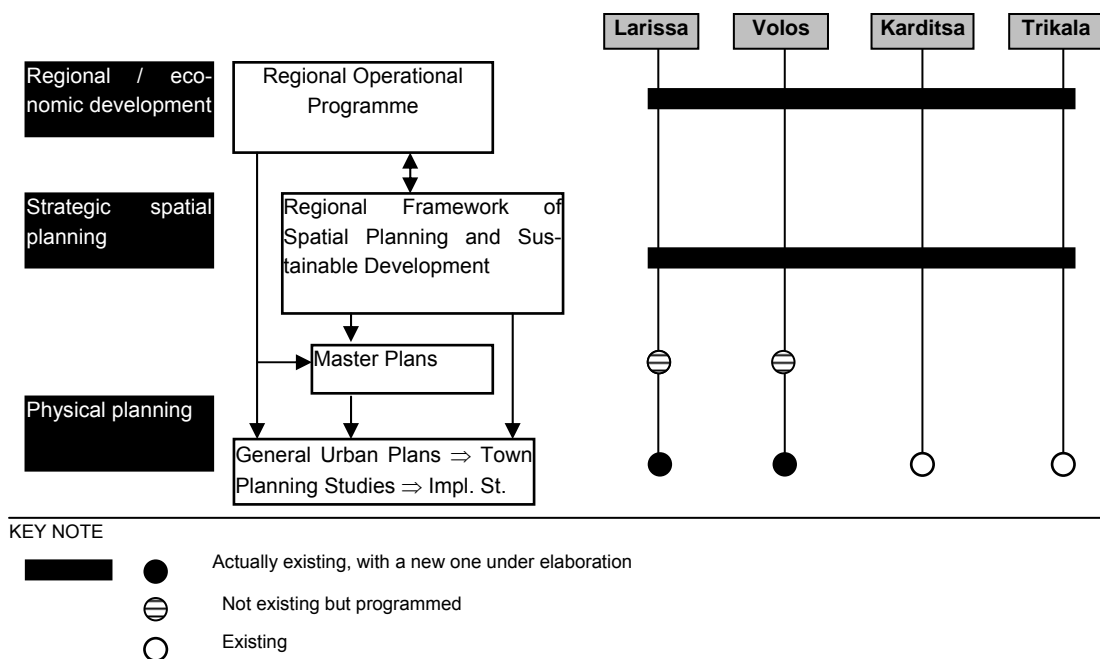
Epirus, and Central Greece. This choice underlines the potential of the city, and constitutes a reminder of the even greater potential an eventual dipole Larissa-Volos would have.

The structure of the strategic planning system

The main mechanisms of strategic planning available in Thessaly are the following:

- The current development programme is the Regional Operational Programme (ROP) of Thessaly 2000-2006, which is a part of the Community Support Framework for Greece and is co-financed by EU. Under elaboration is the Regional Strategic Development Programme 2007-2013, which will be a component of the correspondent national programme. It must be noted that the financing of public works and interventions in Thessaly is made both by the regional programme and the sectoral national-scope programmes.
- The statutory Regional Framework of Spatial Planning and Sustainable Development (since 2003). This Framework is a spatial plan of strategic character which provides guidance for the lower level town and countryside physical planning (General Urban Plans ⇒ Town Planning Studies ⇒ Implementation Acts).
- According to L. 2508/97 the implementation of Master Plans (that is of intermediate level plans, between the Spatial Framework and the physical plans above) for Larissa and Volos. It is expected that the elaboration of these two plans will start up to the end of 2006.

The structure of the planning system is illustrated in the diagram below:



The main priorities of the Regional Strategic Development Programme 2007-2013

The Regional Strategic Development Programme 2007-2013 (not yet finalized) prescribes the development strategy for Thessaly over the next seven years. Therefore, in the prospect of creation of urban dipoles in Thessaly, this Programme will play a crucial role, both as framework of strategic direction and as a financing instrument. The main priorities of the Programme (in his current version) are the following (EYDE PEP 2005):

	MAIN PRIORITIES	BRIEF DESCRIPTION OF THE PRIORITIES
1	Enhancement of the extroversion of the productive system of Thessaly	Increase of the extroversion of the regional economy, through the attraction of new economic activities, especially in manufacturing industry and the services, as well as increase of the exports
2	Enhancement of the competitiveness of the regional products and services, especially of goods of high and certified quality	Exploitation of the comparative advantages of the Region, in the fields of food production and other local products, and—in particular—support of new business initiatives and projects which are orientated to the quality (through the establishment of certification and control systems as well as the integration of the knowledge economy, new technologies and innovation).
3	Infrastructure and actions supporting innovation and investment	Creation of new beneficial conditions for investment and innovation, with the co-operation of the private sector
4	Sustainable development of tourism, linked with natural and cultural environment	Creation or improvement and better marketing of tourism product and the regional identity, diversification of tourism, expansion of the tourist season, amelioration of the quality of the supplied services, etc.
5	Creation or improvement of infrastructure and networks of local and supra-local character	Achievement of advanced spatial cohesion, and better access for everyone to modern infrastructure and services. Enhanced integration of the regional economy to the national and European framework
6	Development of the human capital and of job opportunities	Promotion of the connection between education and professional training, on the one hand, and employment on the other, focus to the local dimension of employment, and support to partnership and social cohesion
7	Protection, improvement and sustainable use of the natural and built environment and natural resources, linkage between environment and economy	Environment will be handled as both the foundation of sustainability and a resource for development. Special importance will be bestowed upon the protection of nature, water and other natural resources, as well as to the improvement of the urban environment, in co-operation with the corresponding action of the Ministry of the Environment, Spatial Planning and Public Works
8	Promotion of the inter-regional and international co-operation	Essential objective for the next programming period will be the development of inter-regional and international co-operation as a component of the growth strategy
9	Strengthening of the economic and social cohesion inside the Region	Reinforcement of the spatial cohesion of the Region, through the development of its western part and of other areas with problems (mountainous and island areas etc.)
10	Amelioration of the Public Administration in the framework of a modern governance model	Conversion of the public administration, in its all grades and components, to a strategic mechanism which will be flexible and capable to support the economic and social transformation of the Region, and to provide services of high quality without delays

Guidance from the Regional Framework of Spatial Planning and Sustainable Development

The Regional Framework of Spatial Planning and Sustainable Development of Thessaly contains specific analyses and directions for the networking of the cities of the Region and in

particular for a “dipole strategy”. The main relevant directions are the following (note: the emphasizing by bold or italics is ours):

Spatial Development Model

It is expected that the intra-regional networking of the urban centres will be enhanced. The **axis Larissa-Volos**, in parallel with the upgrading of the roles of the two cities, **will be developed towards the creation of a dipole** of inter-regional scope, with a strong concentration of urban and industrial activities, complementarities, and a complex internal spatial organization which will tend to take the form of a metropolitan zone. The **axis Trikala-Karditsa**, as well as secondary axes spreading from these towns to the East, will support the upgrading of the two towns and the development of the western part of the Region (Map 4).

Cities and functions of supra-regional significance

Larissa: The gradual emergence of the “northern development front” of Greece creates opportunities for an enhanced role of Larissa, as the major city “behind” Thessaloniki, and the arising of complementary functions in the fields of commerce and logistics, and possibly of public administration (depending upon the progress of a decentralization strategy). The assuming of such functions by Larissa presupposes the creation in the city of new comparative advantages corresponding to the locational requirements of these functions. These advantages cover the high-level transport infrastructure, the commerce and logistics facilities, the high quality urban environment, the development of services to the firms comprising R&D, of higher education and of training. Regarding the three last points, *the progress of complementarities and co-operation with Volos*, in order to achieve scale economies, is essential (for both cities). The possibilities of major transformation of the actual centre of the city are limited, so the investigation of alternatives in the form of new, well planned, areas of reception of high order central functions is vital.

Volos: The city is already playing a role which exceeds the prefectural and in some cases regional borders: port, university, tourism. All three fields can attain an even more enlarged range, with the support of better transports, urban equipment, and an appropriate strategy for the university (both as an education pole and an R&D dispenser). *The increase of complementarities with Larissa and the gradual formation of a metropolitan zone which will embrace the two cities in different roles* represent opportunities as well as necessities.

Karditsa and Trikala: The isolated, today, north-west section of the Region will assume a radically different role, in the prospect of the connection of Thessaly to the north axis / front of growth of Greece and the western axis, acquiring a character of supra-regional entry-point. This development will open up for the two cities and in particular for Trikala, new possibilities in the fields of commerce and services.

Major zones of inter-regional organization

The regional space is organized to the following zones:

1. The under creation metropolitan zone of Larissa-Volos and the zone Karditsa-Trikala-Larissa.

...

The spatial structure of the Region

The spatial structure of the Region is ordered as follows:

- The existing growth axis between Volos and Larissa is expanded towards the north and the south, covering the major segment of the eastern part of the Region.
- A new growth axis, parallel to the previous, will be formed in the western part of the Region, between Karditsa and Trikala and expanding towards Kalambaka-Egnatia Road to the north, and Lamia to the South.
- Two “Daily Commuting Zones (DCZ)” will be created, corresponding to the above axes and their surrounding area:
 - The Eastern, with *Larissa and Volos as the main poles, creating a dipole*, and Almyros-Efzeinoupolis, Velestino and Tyrnavos as secondary poles.
 - The Western, with Karditsa and Trikala as the main poles and Sofades, Mouzaki, Pyli and Kalambaka as secondary poles. Palamas and Farkadona, which are located in the transversal links of the two DCZ are expected to take up important roles.

Networking infrastructure

- The most important new public works in the field of road network will be two:
 - The (completion of the) motorway North-South (PATHE). This road connects the Region to the main poles of international significance of the country (Athens and Thessaloniki) and through them to the European and international space. The segment of this road traversing Thessaly coincides, more or less, with the growth axis / zone of the eastern part of the Region (see above), and represent an important comparative advantage of this zone.
 - The programmed motorway Panagia-Volos / Lamia (E65). This project is of vital importance for the achievement of the main goal of the Regions (upgrading of its inter-regional / national role) while simultaneously will decisively contribute to the growth of its western part and to the reduction of intra-regional inequalities.
- Gradual development of suburban rail services with a high frequency between Larissa-Volos. In the first phase the existing rail infrastructure with some improvement will be sufficient⁶ but later a thorough modernization of the infrastructure will be necessary.
- Besides the completion of the modernization of the telecommunications infrastructure (under construction), emphasis must be given to the provision of special high-level services to the centres chosen to play an advanced role.

⁶ See below for a different view upon this matter.

Public acceptance (consent)

The degree of public acceptance for strategies of networking and/or dipoles is not easy to be accurately determined without specific surveys. Nevertheless, some general remarks can be made:

- Traditionally, there was a competition between the two bigger cities of the Region of Thessaly, Volos and Larissa. The reasons for this were the similar urban scales and population sizes of the two cities, their equivalence in importance in urban hierarchy and their ambitions to acquire a supra-regional role in the area. This was further fueled by the traditional differences in their urban identities, since Larissa was mostly introvert, mainly focusing in the organization of the agriculture in Thessaly and the regional administration, while Volos was mainly extrovert, focusing in industry and sea transportation –even at an international level- through its port. This historical tension between the two cities was the reason for which the proposal made by the study of the Regional Plan of Thessaly (which was finally officially approved as the “Regional Framework for Regional Planning and Sustainable Development of Thessaly”) about the development of a Volos-Larissa dipole was not accepted without occasionally strong objections.
- At present, there are indications that this tension is being reduced, since currently there are no serious clashes of interests between the two cities. It seems that the sense of a common regional identity, this of Thessaly as a whole, prevails. The General Secretariat of the Region of Thessaly and the Special Management Authority of the ROP, since by essence they function as mechanisms of regional integration. Naturally, they also supported the proposals suggested by the Regional Framework for Regional Planning and Sustainable Development of Thessaly, which stressed the common characteristics and aimed to eliminate the frictions within the Region, by incorporating them in the Regional Development Fund. These proposals adopted the approach of creating and supporting urban networks, they specified the dipole of Larissa and Volos as such, and aimed to eliminating the existing divides within the region (such as the east-west, the urban-rural, and the mountain-plain ones).
- Public consent for the dipole of Volos and Larissa could be further acquired by organizing a participation strategy for planning, developing, and implementing it. Involved agents should be administrative organizations, public bodies, NGOs, and the public in general. This could consist of stakeholder identification, exchange of information, choice of the appropriate participation strategy, and provision for permanent participation structures which should function during the whole process of development of the two-pole system and assist in evaluation and assessment of the development process. This strategy should not be restricted to participants from the two cities, but should also include the equivalent ones of the intermediate zone (the area between the two cities, rural and urban) who also have a significant role in the system.

The dipole Volos-Larissa

Aims and Objectives

The concept of a closer relationship between Volos and Larissa aimed at their common function on a broader spatial level is at least 40 years old. The Regional Study of National Network of Urban Centres (KEPE, 1967) introduced for the first time the notion of a dipole, with clear reference to Volos and Larissa. The objective was the creation of a “multicentred centre” (same: 32) with distinct urban centres, each one specialized in a subcategory of functions of the equivalent level in urban hierarchy, which, on the other hand, were closely connected. The study of the organization of the Centre of Intense Development (KEPA) of Volos and Larissa (Ministry of Public Works, 1979) which was officially approved⁷, adopted the same concept for the two cities, predicting a population of about 335.000 for the year 2000 (160000 for Volos and 175000 for Larissa). Here it has to be noted that the sum of the population of the two cities in year 2000 was in fact 240000, but one could also claim that the hypothesis/prediction of the study was based on the presumption that a certain policy would be adopted, something that never happened.

The existing –and officially approved- Regional Framework of Regional Planning and Sustainable Development for the Region of Thessaly has also clearly adopted the rationale behind the concept of the two-pole system for Volos and Larissa. The concept was partly incorporated in the Regional Development Fund 2000-2006, as well.

Consequently, the objective of developing the dipole of Volos and Larissa seems to have a high degree of maturity, and, at the same time, it has the appropriate institutional support.

Considering also the essential advantages which such a system presents, one should mention that according to the 2001 population census, the population of Volos and Larissa put together is more than 240000 (since the real population is estimated to be at least 5% more than the recorded figure). This brings the two-pole system in the third place of urban hierarchy in Greece, behind Athens and Thessaloniki and before Patra, which now is in the third

⁷ It was officially approved at 1981 from the –then- National Council of regional Planning and the environment. The establishment of Centres of Intense Development (KEPA) was the core of urban policy of that period. It was based on the theory of development poles/centres and its basic goal was to create six regional “counter-centres” or dipoles, capable of counterbalancing the uncontrolled increase in growth of Athens and Thessaloniki. The other two-pole systems of KEPA policy, besides the Volos – Larissa one, were in Patra – Aegion and Kozani – Ptolemaida. The term “dipole” of that period –as well as the one of the 1967 study- had a slightly different context than the present one (see chapter one), but since they also referred to networking of neighbouring cities for the achievement of economies of scale, one could claim a high degree of relevance between them.

place with a population of 163000. Furthermore, if the two-pole system functions as it is planned, the estimate of its population for 2010 is around 300000. With this figure, the two-pole system can be expected to become a small metropolis, acquiring, thus, an upgraded role in urban hierarchy, if compared to the equivalent roles of the two cities separately.

Another outcome of the upgrading described above—which is also indicated by the recent selection of Larissa as the centre of the enlarged Region of Thessaly, Epirus, and Sterea Hellas— would be the spread of influence of the Volos-Larissa system beyond the current regional boundaries, and in international level —especially in the southwest area of the Balkans. Such a role would necessitate the establishment of new services in the fields of administration, higher education and research, as well as the construction of big scale cultural infrastructure, i.e. another “Megaron of Music”⁸ spreading its operation at two spheres: in cultural activities and in city marketing⁹. Furthermore, a unified labour market, bigger, more flexible, and qualitatively differentiated than the present separate ones of the two cities, could attract private investments in manufacturing industry —a field in which Volos has a rich experience and is also active now— and in the provision of services in private companies, which is a basic characteristic of contemporary metropolises. In this way the competitiveness of the Volos-Larissa system could increase and could surpass the current local limits.

An upgrading could also occur in the competitive advantages of the cities, since the economies of scale would allow better basic infrastructure, both technical and social (i.e. achieving viability of regular air transport, providing better education and health services etc.).

The above remarks justify the necessity of the development of the dipole of Volos and Larissa in both: the accordance to the existing official plans and policies, and the real and essential advantages accrued under the present circumstances. In brief, the main elements that make dipole Larissa-Volos advantageous are the following:

1. The dipole attains a combined population that renders it a small metropolis.
2. (1⇒) Considerable economies of scale and urbanization are created.
3. (2⇒) Upper level functions, actually absent from either the two cities or Thessaly as a whole, are made feasible.
4. (1 και 3⇒) Both the competitiveness and the quality of life in the dipole are improved.
5. (3 και 4⇒) The competitiveness and the level of growth of Thessaly will be increased, the intraregional disparities will shrink—at a second phase, through the diffusion of multiplicative effects—, and the quality of life in the whole region will be ameliorated.

⁸ A building of big scale, made to accommodate musical events is called in Greece “Megaron of Music”. The name currently refers not only to the building but to a whole series of activities and a discreet cultural organization associated to it. There is two of the kind today: one in Athens and another in Thessaloniki.

⁹ The location of flagship projects in the Volos-Larissa system, at least during the first phase of its development, should be examined carefully, since a “neutral” choice —i.e. towards the middle of the zone between the two cities— might be useful in avoiding tensions and competitive feelings between the two cities. The creation of one or more cultural quarters in this zone might be a good example.

The next issue to deal with is the feasibility of such an operation.

Feasibility

The feasibility of the development of the dipole of Volos and Larissa has been referred to, in the first two chapters. Further elaboration and analysis of the feasibility can be expressed in the following remarks:

1. The present distance between Volos and Larissa is around 50-55 km.
2. With the existing road transportation infrastructure, the time distance through PATHE (international motorway, 2.5+2.5 lanes) approximates 30 min. by private vehicle and 35 min. by bus or truck. Time distances of this level are usually considered intra-metropolitan, taking into consideration that “internal” time distances in Athens and Thessaloniki are equivalent or even longer.
3. Time distance between Volos and Larissa by train is at present 35-40 min. Improvements in the existing rail infrastructure can further reduce it in the near future. Nevertheless, improvements of this type are not considered adequate for the overall operation of the two-pole system. Basic modifications are essential, including a higher frequency of trains (suburban line), improvements in the design of rail lines which will reduce their total length, construction of a double line electrical rail system, a combination of train – tramway for the continuation of the trips inside the cities of Volos and Larissa, servicing of the zone between the two cities by this suburban rail system with one or two stops – since this zone is considered essential for the full development of the system in both administrative and functional terms. The feasibility of construction and operation of a railway system resembling the TGV in France and the super fast trains in Spain could be examined, considering at the same time that it can also play the role of a flagship project for the two-pole system.
4. Despite the existence of two, adequately equipped airports in the area (the one in Anchialos can serve passenger flights with its current infrastructure, while the Larissa airport can also reach this level with few improvements) the area is not served by air transportation. Focus of attention should be on one of them, which should be upgraded to the main airport for the wider area (possibly of inter regional significance) and at the same time combined to the other transportation means of the two-pole system, creating, thus, a fully combined transportation node. The basic problem today is the lack of regular flights to the area. This might not be a disadvantage for the internal function of the Volos – Larissa system, but it significantly reduces its potential for exploiting its comparative advantages and consequently, for playing a role of interregional and international significance. The full operation of the Volos-Larissa system, on the other hand, could improve significantly the viability of regular flights.
5. The other types of technical infrastructure of the area, and especially the telecommunications and the energy networks are sufficient and can support a closer synergy of the two cities.

- 6.** The social and cultural infrastructure of the two cities, added together, is adequate to cover needs at a regional level. One should mention primarily the hospitals and the higher education establishments, and secondarily the athletic and cultural facilities and events. Nevertheless, there are still needs for improvements. Interventions for improvements should initially focus on higher education. University of Thessaly is gradually becoming one of the most important universities in Greece. Among its departments there are some which are crucial for contributing to the metropolitan – developmental role of the area, in the fields of economics, medicine and engineering. The university still faces, though, new challenges, in enriching its departments with new ones in core subjects/fields, in improving its infrastructure for research, and in achieving greater internal connectivity, something essential for securing and strengthening external academic economies.
- 7.** It is clear that greater need for improvement is necessary in the domain of culture, where, despite the aforementioned existence of basic technical substructure and a certain level of tradition, there is a need for high quality premise infrastructure. As mentioned above, today's grand cultural symbolic [flagship] buildings, become essential elements, for every size of city marketing strategy. Such buildings have a significantly high construction and occupancy cost, but nevertheless, they create agglomeration economies for the greater territory where they are located -in our case, the dipole as a whole (independent of the specific location in it) and also for the rest of Thessaly.
- 8.** Research infrastructure and activity is really limited, in spite of the local University's performance. On one level, this is in accordance to the well known, significant deficiency of Greece in the development process, since in research it is the last of the E.U.15 member-states, and also lacks behind several new member states. If we also consider the fact that this limited research is focused exclusively in Athens and Thessalonica, it is obvious that the territory of Thessaly lacks notably behind. This deficiency does not become a major obstacle, however, for the formation and function of the two-pole system, according to criteria for its internal function, but it is indeed, a diminishing factor for the perspective of the system to become the third metropolitan centre in Greece.
- 9.** As for the infrastructure of production, the existence of organised and functional industrial parks in both cities is in fact important. The lack though of a logistics centre is a disadvantage, but the most likely possibility is that it will be planned to open in the few years to come (funded from the regional or national development plan 2007-2013) whereas, concurrently, the existence of the Volos – Larissa system will render more viable and attractive environment for private sector. There is also a serious need for a large scale conference centre, for hosting grand size conferences with more than a thousand participants. The greater area of the two-pole system can support this scale of conference tourism. Furthermore, considering tourism one could also note that there is a shortage of high scale new (special) types of tourist activities such as golf and tourist residences.
- 10.** The existing spatial plans of the two cities and their surrounding areas, including the zone that expands between them, do not meet the crucial needs of a potential dipole. In short, it is required: (a) the legitimization of land use policy for rural space, that will be compatible with a selective urban formation of the intermediate zone (and that does not

mean urbanization in general; on the contrary, the preservation of extended natural areas is essential; it also means that the rational procedure for choosing the location of big scale infrastructure, and the gradual approaching of the two cities through the establishment of new urban areas, have to be facilitated). b) for urban space, the regeneration of central areas that today face functional problems, the revitalization of the city centres, and the tackling of problems related to: inner traffic, parking, aesthetics of urban space, functionality of public space, environmental issues, etc.

11. The cumulative size of the two cities in terms of their population and specifically the active population, for 2001, was around 240.000 and 87.000 respectively. These figures are adequate for a starting point. For both types of figures, the two-pole system of Volos and Larissa is going higher in urban hierarchy –obviously due to the fact that both urban poles are already big enough for Greek standards. This means that the formation of the two-pole system leads to a situation of higher quality for the two cities independently of each other, and it becomes a new reference point for Greek urban system. As mentioned above, the two-pole system of Larissa - Volos takes up clearly the third position in the national urban hierarchy, with significant difference from the following city of Patra (which at present it is third), and it can play the role of a small metropolis in the wider area of central, mainland Greece, between the two major existing metropolises of Athens and Thessaloniki.
12. The size of the future two-pole system is evaluated differently, though, based on criteria for a role of international metropolis. For Western Europe, a metropolitan role necessitates about a million inhabitants. From Greek metropolitan centers, only Athens and, in a lower degree, Thessalonica, reach these standards, albeit their ineffective international metropolitan role¹⁰. The cumulative size of Larissa and Volos are far from this figure, and evidently the perspectives from this point of view are not encouraging. However, this situation is totally different in respect of territories of South-East Europe. In this part, no country has developed a great metropolitan area, or a secondary one, in city size and rank¹¹. Consequently, this shortage of the area according to development parameters,

¹⁰ See Economou (2000a and 2000b) for a detailed analysis of this issue and the requirements necessary for an international metropolitan role.

¹¹ See for an analysis of the relative data Economou and Petrakos (2002). Some conclusions are briefly presented at the table below:

Country	Number of cities according to rank size population (in million inhabitants)						
	> 3	3 > 2	2 > 1	1 > 0,5	0,5 > 0,2	0,2 > 0,1	0,1 > 0,05

which can be expressed in income per capita, can grant an even higher comparative economic advantage to the Volos – Larissa system. Thus, a metropolitan role on international level, focused in certain activities for which a comparative advantage would be apparent, is not unrealistic.

- 13.** The development and the effective functioning of the two-pole system, require political will – which should be expressed through the implementation of an appropriate strategy– and social consensus (not only with a simple acceptance of the idea, but with an active participation of the public). The political will seems to be easily lined up without significant difficulties, and the incorporation of this in the Regional Operational Plan of Thessaly, becomes strong evidence that this assertion is true. The imminent new planning of both cities, at the level of Regulatory and General Development Plan provide significant support to the necessary strategic planning. On the other hand, the existence of social consensus requires thorough research, and most probably, further elaboration of whatever encouraging elements exist.

Albania					1		5
Bulgaria			1		2	6	14
Bosnia-Herzegovina					1	1	3
Croatia				1		3	4
Serbia			1			7	19
FYROM					1		4
Greece	1			1		4	7
Rumania		1			11	12	23

Strategy for the implementation of the dipole of Larissa and Volos

Despite older and recent planning decisions for the implementation of the Larissa-Volos urban system, this policy has not been systematically implemented. A notable exception was the adoption of this objective from sectors of the regional administration (EYPEP). Nevertheless, this cannot stand on its own, if it is not adopted officially as a strategy in various levels of administration, and if no operational planning is encouraged. The basic elements of such a strategy are presented at the following table (with a distinction in elements necessary for the formation of the two-pole system and elements for the maximization of its benefit). The proposed actions are depicted in the priority indications of A or B (with A indicating greater priority).

Sector	Actions	SWING net configuration	Benefit Maximization of SWING net
Transportation	Suburban railway	A	B
	Regular flight schedules		A
	Improvements in the connection of Volos with the National North-South motorway	B	B
	Significant increase of parking spaces in the areas surrounding the centre, and management of parking facilities in the centre.	A	B
	Upgrading of quality of bus lines (Research for the feasibility of enriching the Public Transportation system with alternative means like tram – together with suburban railway- and small boat service in Volos).	B	
	Alleviate traffic problems	B	B
Telecommunications	Further improvements of networks	A	A
Social and cultural infrastructure of inter-regional scope	Further development of the University of Thessaly		A
	Upgrading of research infrastructure and of research activities.	B	A
	Design and choice of location of grand scale cultural buildings / symbols (flagship projects -1 or 2)	B	A
Productive Infrastructure	Logistics Centre	B	A
	New industrial and commercial parks (VEPE)	B	B
Development Planning	Schedule certain actions for supporting the two-pole system in the framework of Structural Funds 2007-2013	A	B
	Make use of the new development legislation (2007) for support of the two-pole system	A	A
	Elaborate strategy of city marketing for the dipole		B

Spatial Planning	Incorporate the Volos – Larissa system in a broader networking policy of the urban system of Thessaly, and in a second level, of the central mainland of Greece		B
Urban Planning	Co-ordinate Regulatory Plans and General Development Plans of the two cities	A	B
	Enact suitable land use policy in the rural intermediate space	A	B
	Regeneration the existing urban space, and especially of the city centres	B	A
Governance	Develop mechanisms of metropolitan governance at the level of each single city and administrative organizations at the level of the dipole	B	A
Private sector	Attract new investments in sectors of metropolitan level	B	A
Social consensus	Improvement in the degree and means of acceptance of the two-pole concept from the part of the general public, on one hand at the level of the individual cities, and on the other hand at the level of Thessaly (Create participation structures and culture). Other actions, outcomes of social policies which contribute to the support of sensitive social groups, to de-marginalization, social cohesion and solidarity, education and sustainability.	A	B

All the above sectors and actions are of great significance. Given that the development of the two-pole system requires a complex and multilevel strategy aimed to cover all the issues described above, it should be stated that the following packages of actions have another strong priority:

➤ Regarding the planning and development of the dipole, that is, the first strategic phase, priority should be given to the multiple actions of transport sector. They include the improvement of mutual accessibility of the two poles is an absolutely vital precondition of the ‘merging’ of each particular urban market into a new, bigger and integrated one, promoting economies of scale and agglomeration ones. The actions of this package that could be called “transport-accessibility” are the following:

- Suburban railway
- Regular flight schedules
- Improvements in the design of the highway connecting Volos with the national North – South motorway (PATHE).
- Significant increase of provision of parking space around the central district of the cities, and parking management in the city centre.
- Upgrading of the bus line service
- Confronting traffic issues

➤ As for the maximization of benefit for the two-pole system, that is the second phase of strategy (which should start being implemented at the same time with the first phase – the difference between the two phases is mostly the one of transferring the focus of attention between actions, after the transition from the first to the second phase), a set of actions is of

great significance, which originate from different sectors, but combined, they will increase the competitiveness of the two-pole system in interregional and international levels (and will also create the preconditions of spreading the new development in the rest of the Region of Thessaly). This sector that could be named as “competitiveness” consists of the following actions:

- Use of the new legislation concerning development (2007) for supporting the two-pole system
- Elaboration of a city marketing strategy for the two-pole system
- Develop mechanisms of metropolitan governance at the level of each city and organizations and tools for their administration at the level of the dipole.
- Attract new investments in sectors of metropolitan character
- Improvement of the degree and means of public acceptance of the Volos – Larissa urban system in both: the two cities and the Region of Thessaly.

Map Appendix

Diagram 1 The Region of Thessaly in Europe

Diagram 2 The Region Thessaly in Greece

Diagram 6 Transport and energy infrastructure

Diagram 4 Land uses-Specific categories of space

Diagram 3 Poles and axes of development – Growth zones- Zones of daily commuting

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