NON MOTHORIZED MOBILITY, SUSTAINABLE TOURISM AND LAND RESOURCES IN ITALY

R. Busi, M. Pezzagno

Department of civil engineering
University of Brescia, Brescia,Italy
e-mails: roberto.busi@ing.unibs.it, michele.pezzagno@ing.unibs.it

ABSTRACT

In Italy non motorised vehicles network in extra-urban areas is fragmented and it is principally composed by trails, military roads and paths, mule-tracks, natural itineraries, etc.
In the last years the growing demand of non motorised mobility for recreational and tourism purposes has implied long distance itineraries planning along natural, historical and cultural resource systems.
This aims at defining a methodology to evaluate and to use linear natural and/or anthropological resources (rivers, waterway systems, dismissed railways, in particular along coast-lines, sheep tracks, military roads, etc.) as the skeleton of a non motorised mobility territorial network based on tourist potentialities of Classic (i.e. Roman roads system) and Medieval (i.e. pilgrims itineraries: "Romei" to Rome, Santiago de Campostela, Jerusalem, etc.) historical itineraries.
These historical trails and paths, linked to each other and to other secondary itineraries would allow non motorised people movement, at a territorial scale, crossing rural areas, urban areas, historical centres, in a qualified environment, passing through natural and anthropological resources and landscapes.
The research, funded by MIUR (Ministero dell'Istruzione dell'Università e della Ricerca/ Ministry of Instruction, University and Research), deepens an interdisciplinary methodological project-oriented approach focusing the attention on the following criteria:

- existing territorial resources analysis for non-motorised mobility (both as dismissed existing infrastructures and as landscapes and natural environments);
- existing and recent laws and guidelines, deepening in particular territorial and environmental competencies at a Regional, Provincial and local level;
- path and greenway system planning according to ownership and the right of ways; non motorised mobility infrastructure network designing and dimensioning according to the equipment required by "new tourism" focusing the attention both at local and territorial level;
- non motorised mobility infrastructure network system/natural resources managing focusing the attention on the time of use and on the accesses location.

In the paper the results of the research are presented, focusing on the problems emerging from the interdisciplinary approach.

INTRODUCTION

Several European projects (Report on VRU, ADONIS project, PROMISING project, DUMAS project, PASSIM project) have highlighted the problems of safety in relation to the mobility of non-motorised users and the conditioning that such problems have on the modal choice that people make on a daily basis both in systematic and non-systematic mobility. Non-motorised mobility networks have a strategic role within the framework of the improvement of the living conditions in urban areas and the promotion of sustainable mobility, both in the urban and territorial spheres. In reference to urban mobility, measures and techniques to be used in order to improve safety and mobility conditions for vulnerable road users (traffic calming, 30km/h Zones, networks dedicated to cyclable mobility, etc.) are well known in the literature and are ever more frequently used in Italy.
Interest in the development of networks dedicated to non-motorised mobility at the territorial level, particularly for tourism and recreation, poses new problems of a highly interdisciplinary technical nature for those responsible for the works: from the geometry of the infrastructure, to the mode of equipping the same, from the possible solutions to be adopted in promoting the itinerary, to the modes and forms of the tourism offered.

RESULTS OF THE RESEARCH

The research project "Non-motorised mobility and territorial resources: an interdiciplinary comparison for planning" (Cofin MIUR 2003, national coordinator: Prof. R. Busi, University of Brescia) seeks to overcome the limitations of the sectorial approach by proposing an interdisciplinary group made up of engineers, architects, economists and lawyers.
The research group is composed of the following members:
Prof. R. BUSI, Dept. of Civil Engineering, University of Brescia;
Prof. E. BALBONI, Dept. of Private and Public Economic Law, Università Cattolica del Sacro Cuore, Milan;
Prof. M. ANTONIOLI, Dept. of Political Economy, Università Bocconi, Milan;
Prof. S. INNOCENTI, Faculty of Engineering, University of Bergamo.

In the first place, the research groups debate has highlighted two fundamental aspects:

- the lexicon used has different meanings in the various disciplines even with reference to elementary terms such as "route", and so the construction of a shared language is thus fundamental;
- public right is placed as a fundamental – transversal matter with respect to the various themes, and so the presence of a lawyer specialised in such matters is indispensable for the identification of the problems and the legislative voids which may prejudice the realisation of an itinerary *a priori*.

The interdisciplinary analysis carried out has highlighted how the motivations, logic and consequently the political choices which lead to the realisation of a network for non-motorised mobility at the territorial level may be profoundly different if viewed from planning/transportation or economic viewpoints.

In the first case the motivation is predominantly social in nature, for example:

- improvement of the spaces available for leisure and sport;
- improvement of the quality of non-systematic (and systematic) mobility in any given area;
- enhancement of natural and/or lesser anthropic morphological linearity (minor

hydrographic systems, canals, dirt tracks, headlands, paths, etc.); improvement of the connections between a territories greenspaces (with a partial ecological function).

The infrastructure in this case should allow "roving" *i.e*. the leisure time moving around on foot, by bicycle, on horseback, possibly entering into liaisons with other individuals.
This means routes within greenspaces in the order of tens of kilometres predominantly used by the inhabitants of the urban centres nearby. In the second case the motivation is above all economic, for example:

- the sale of typical products along the itinerary;
- access to certain resources identified within the tourism "package" being sold.

Hence, the infrastructure should meet the needs for moving around in order to see/visit archaeological sites, churches, parish churches, wineries, etc. offer opportunities for refreshment and overnight stays in suitable structures (for example in agritourisms) and would thus necessitate the networking of a complete and articulated series of individuals in order to meet the various needs of the tourist.

Currently, the themed routes (wine cheese routes, etc.) are not intended as infrastructures (for motorised mobility or otherwise), but are simply signposted itineraries, created following the networking of some individuals (for example wineries, towns, etc.).

The sound interest in helping with the creation of an infrastructure for non-motorised mobility at the territorial level (greenwayi.e. "A system of routes dedicated to non-motorised circulation able to connect populations with the natural, agricultural, landscape and historic-cultural resources of the territory and with the "life centres" of urban settlements, both in the cities and in rural areas." Art. 2 of the regulations of the Italian Greenways Association, 17.12.1999) a series of services, intended both as information for the user – information panels, adequate signposts, etc. – and as equipment supporting mobility – from urban furnishings (benches, drinking water fountains, etc.) to the possibility for overnight stays, etc. – require that it is highly integrated with the territory which it crosses and "strongly desired" by its inhabitants. The logic for the creation of this type of infrastructure should not be only economic but also, above all, social in nature.

Primarily, the infrastructure should be at the service of those living in the nearby urban centres both as a network for non-systematic mobility – leisure time – and as a systematic mobility network – going to school, to work – in order for this to happen, it should be structurally connected and hence easily accessible from the non-motorised mobility networks at the local level, those being for cyclable and/or pedestrian mobility, suitably equipped with parking areas and with the nodes served by optional mass transport lines.

The interdisciplinary approach offers numerous opportunities for reflection into the planning, also in relation to the impact which tourism has on the local community and which man has on the territorial resources.
Particularly, tourism should not preclude the normal socio-economic functions which characterise the urban centres affected by the itinerary with changes to the cultural and social traditions.
In the case of the users exploiting the networks for non-motorised mobility (cycling, pedestrian and equestrian tourism) tourist volumes are highly seasonalised and bound to the climatic conditions of the area with potential overloading of the network during

certain periods of the year.
Even when talking about informed and sustainable tourism (Lazarote chart, 1995) the risk involved is a generalised degradation of the existing resources, primarily along the layout, with the consequent loss of their peculiarities and qualities.

Hence any network for non-motorised mobility should be devised and planned in order to autoregulate the number of users – a study of the geometry of the infrastructure with adequately variable sections, segregation of the types of users, limitations in the numbers having access to fragile areas, a reduced number of "hotel" in the individual urban centres, concentration of the impacting activities, etc. - in some cases favouring the preservation of the ecosystem over the exploitability of the resources.

Territories are characterised by numerous natural (rivers etc.) and anthropic (disused railways, military roads, historical rights of way, etc.) linearities which, due to their intrinsic characteristics (length, route continuity, etc.), are ideal places along which to realise infrastructures for non motorised mobility at the territorial level, even for tourist uses.

Aside from the plurality of territorial linearities which may be developed, it is important to remember that:
- plans for the recovery and/or enhancement of such linearities involve spheres much wider than the subsoils of the infrastructure to be created, and that all the resources identified in any given territory made exploitable through the realisation of the plan (principal and secondary), those being urban centres, isolated buildings, natural elements and landscapes.
Hence, the twofold problem opens up associated with the possibility of the realisation of the infrastructure in the strictest sense (the greatest problem seems to be with the ownership of the areas) on the one hand and, on the other, the effective possibility/opportunity for making the resources characterising any given territory exploitable/visitable;
the landscapes crossed, understood as being the collection of the longitudinal and transverse planes existing along the route, constitute the elements determining the attraction of the route and as such will have to be the guide criteria for the choice of the natural and anthropic linearity to be exploited. Indeed, the activities taking place along a network for non-motorised mobility – walking around, resting, lingering, listening, watching – allow an infinite variety of scenarios, with 360° views, each determined by the speed and the type of means used, where the user is an integral part of the landscape, within which they are moving.
In planning matters, entering into the virtue of the problem, the planning of networks for non-motorised mobility should take place at the territorial level (regional, provincial) in order to obtain, as much as possible, real continuity of the infrastructure and provide appropriate solutions – route changes, the use of suitable equipped lightly trafficked secondary roads- wherever that was not possible.
The creation and management of the network will then have to follow the principle of subsidiarity.

The planning, besides the use of natural and anthropic linearities should tend to enhance the existing resources in the territory, in relation to their degree of attractiveness, exploitability, "fragility", with particular attention:

- to buildings of historic interest (churches, parish churches, villas, industrial archaeological buildings, etc.);
- to technological infrastructures (power stations, mill systems, bridges, dams, etc.) considered to be characterising of the area being passed through;

- to the receptive structures already existing in the territory with the development of the local eno-gastronomic and productive traditions.

Furthermore the route should favour the variety of scenery and landscapes able to be crossed through and visible from the route in such a way as to be representative of the regional environment.
The specialisation of the itinerary to be realised (themed or territorial) should be highly conditioned by the geo-morphological/economic/social characteristics of the local communities affected by the project.
The equipment will have to be tightly bound to the system of tourism (agritourism, eco-tourism, rural tourism, extreme and adventure tourism, etc.) that it is desired to promote in any given territory, particularly the plan of intervention should only be initiated following a strategic environmental assessment (SEA) carried out by also paying attention to the costs brought about by the engaging in tourism: nvironmental deterioration, changes to the landscape, progressive reduction of local economic activities – agriculture, sheep farming, handicrafts – in cases where the pre-existing activities have low profitability with respect to those of tourism. The non-motorised mobility network should not be planned as an individual itinerary, but as an articulated network of routes and their functional classification would allow the forecasting of geometrical characteristics and service levels on the basis of the volume of traffic expected over the network. The territorial environment identified should allow the enlargement of the system over time depending on the network load.
The main accesses would have to be foreseen in the urban areas concentrating the increased number of users within the mostly anthropised environments where the route will be characterised by wide pavemented sections, favouring the thinning of the same on the basis of the speed of movement and the users desires towards an adequate range of routes. Secondary accesses should be localised in rural areas.

LANDSCAPE STRUCTURE	NATURAL AMBLES - Plain - Hill (300-600m) - Mountain (>600m) - WaterfrontURBAN AMBLES - Historical centers - Urbanized areas o industrial sites o residential sites INFRASTRUCTURE NETWORK SYSTEM - Railways - Traffic road system o Highways o Main roads o Secondary roads o Local roads - Slow mobility network o Territorial trails and cycle paths
ANALYSIS OF TIES AND AVAILABILITY OF THE AREAS FOR THE PATH ITSELF AND FOR THE CONNECTED AREAS	NORMATIVE TIES - Legal directory of ties - Lies system effects EXISTING PLANS - Territorial level - Local level ONGOING PROJECTS - Sites identification
LOCATION OF THE RESOURCES	REAL ASSET LOCATION - Historical centers/ancient settlements - Urban areas - Religious historical buildings - Defense historical system - Rural architecture - Historical villas and parks - Brownfield archeology UTILITY AND SERVICES - Receptive facilities - Green open spaces PANORAMAS (existing or potential) - of the natural landscape; - of the water landscape; - of the agricultural landscape; - of the urban landscape; - Focal points of the panorama

Table 1: Methodology for the analysis of territorial figures proposed by the research group

TERRITORIAL RELIEF	GLOBAL POSITION SYSTEM RELIEF - of the itineraries o territorial o local - of the existing/potential access system TRADITIONAL RELIEF - Length - Slopes - Wideness
SCHEDULING	SPACE AND TRAILS - Figures and signs - Pavements - Baffer - Lighting - Open space perception - Landscape scenarios

Table 2: Methodology for relief and schedule of existing tracings proposed by the research group

SUPPORT TO THE CHOICES MAP (focusing on ongoing urban and outdoor policies at a territorial and local level)	SWOT ANALYSIS
CONCEPT PLAN	OVERLAYING PROCESS - Landscape structure synthesis - Ties synthesis - Resources location synthesis - Existing tracings synthesis IDENTIFICATION OF THE CORRIDOR
PROPOSING A MULTIUSE GREENWAY NETWORK SYSTEM	FUNCTIONAL CLASSIFICATION OF THE NET - Non motorised mobility o greenways o trails o paths o rings o cycle tracks - Motorised mobility o 30km/h zone o limited traffic zones o woonerfs ACCESS SYSTEM - Connections and facilities o public transport o railway stations o parking areas RESUCE SYSTEM - Accessibility - Visitability - Usability

Table 3: Planning project approach proposed by the research group

CONCLUSIONS

The creation of a network for "Non-motorised mobility" which enhances the "territorial resources" for tourism-recreational purposes may not omit the consideration of a highly interdisciplinary approach aimed at the combination of the needs for exploitability and the safeguarding of the territory.
Hence, planning cannot be limited to the infrastructural system, but by starting from the identification of an area of tourist-recreational interest characterised by numerous resources, some of which being visitable, it must specify the corridor within which to realise the infrastructural system of the routes. Such an environment will inevitably be subject to greater environmental deterioration (moreover more restrained, all other conditions being equal, in the case of non-motorised mobility) combining the needs of tourism with those of the local communities.

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