THE PEP Steering Committee, 8<sup>th</sup> session Agenda item 7(b) Implementing the Amsterdam Declaration

# Workshop on safe and healthy walking and cycling in urban areas 30 September-1 October, Batumi (Georgia)

## **Draft report**

# I. Background

1. As part of THE PEP Relay Race (staffete) adopted by the Third High-level Meeting on Transport, Health and Environment (Amsterdam, January 2009), the second workshop on Safe and Healthy Walking and Cycling in Urban Areas was held in Batumi, Georgia on 30 September to 1 October 2010. The workshop was organized jointly by the UNECE and the World Health Organization Regional Office for Europe under the auspices of THE PEP, in cooperation with the Ministry of Labour, Health and Social Affairs, Ministry of Environmental Protection and Natural Resources, Ministry of Regional Development and Infrastructure of Georgia, the region of Adjara and the City of Batumi with support from the Governments of Austria and Switzerland. The main organizational and promotional tasks were carried out by the non-governmental organization Rio Environmental Centre for Sustainable Development in Tbilisi. The final programme of the workshop is attached in annex I. A list of the presentations given is in annex II. *The presentations can be found at http://www.unece.org/thepep/en/workplan/urban/batumi\_docs.htm.* 

# II. Participation

2. The Batumi workshop was attended by 62 experts from 17 UNECE and WHO/Europe Member States and civil society, including national and local government officials, city planners and architects, academics and researchers from the following countries: Armenia, Austria, Belarus, Belgium, Czech Republic, France, Georgia, Germany, Kyrgyzstan, Latvia, Netherlands, Moldova, Switzerland, Tajikistan, The Former Yugoslav Republic of Macedonia, Turkmenistan and Ukraine. Non-governmental and intergovernmental organizations included: Chisinau Branch of the Environmental Movement from Moldova, Greenways programme Czech Environmental Partnership Foundation, International Charitable organisation "Information Center "Green Dossier" (Ukraine), Partnership for Road Safety (Georgia), the Cyclists Union (Netherlands), International World Travellers Association, Tbilisi Art Academy, WHO CEHAPE Youth Network. The local organizer of the workshop, responsible also for media and public relations and the launch of the walking

school bus was the Environmental Information and Sustainable Development Centre "Rio".

## III. Technical cooperation on walking and cycling

3. In connection with the technical cooperation and capacity building role of THE PEP, the Government of the Netherlands provided Georgia with a technical expert, Mr. Henk Hendriks, Project Manager of the Cyclists Union, to assess the situation on the ground in Batumi in advance of the workshop. The objective of the advance technical mission by an expert on walking and cycling from the Netherlands was to determine the feasibility of the infrastructure, legislation and safety regulations to support non-motorized transport, to identify obstacles and make recommendations for future action. Below is an account of the findings of the technical visit and policy recommendations at local and national level that emerged during the workshop deliberations.

#### A. The transport setting in Batumi

- 4. The technical visit was initiated in order to assess the walking and cycling potential in Batumi and to make recommendations that could be presented during THE PEP workshop; to raise awareness of the local population of the feasibility and attractiveness of non-motorized transport and to draw the attention of the local and national press to issues of environmentally and health-friendly transport. Below is a description of the transport setting in Batumi, with an emphasis on the existing walking and cycling infrastructure, its use in the city and plans for future development.
- 5. The tourist season in Batumi runs from the beginning of June through mid-September. During this time, traffic is chaotic and congested, especially on the main roads. Cycling as a means of travel to work during this period is often more rapid than by car. Traffic calming measures are particularly important during this time. Ongoing road construction hinders both cycling and pedestrian traffic.
- 6. During the peak tourist season, the predominant pedestrian traffic flows are from the city centre to the beaches. The overall impression of Batumi by tourists would improve if the roads leading to the beaches were more accessible to pedestrians and cyclists. For example, pedestrian sidewalks should be widened, separate bicycle paths should be continuous and link the city with the beaches and traffic, calming measures should be imposed, such as a limit on the number of cars in the city centre. On several streets, such measures have already been initiated during the tourist season, mainly by installing large middle barriers which modify crossroads into T-junctions which affords greater road safety by facilitating crossing on foot and by bicycle.
- 7. Cycling is accessible and popular in the beach area and on the sidewalks in the city, although many sections of the city do not have dedicated bicycle paths. Walking routes from the beaches into town could also be improved, providing increased traffic safety for both pedestrians and cyclists.

8. Cycling is an interesting option, moreover, for secondary school students travelling from nearby villages to Batumi, in particular along the beach boardwalk which is ideal for cycling, as well as for tourists traveling throughout the region of Adjara.

# B. Launch of the walking school bus

9. Awareness-raising on walking as a viable, healthy and environmentally-friendly means of urban mobility was stimulated by the launch of Batumi's first walking school bus for children. The event was covered by local and national television and radio stations and was attended by local and national politicians, architects and city planners. The walking school bus evoked public awareness and discussion on how to motivate children and parents to see walking as an attractive mode of mobility and identified local requirements for a safe and healthy route. It was evident that groups of children walking together and groups of cyclists (such as those cycling as part of THE PEP workshop event) drew special attention. THE PEP workshop moreover received exposure in the local press and provided a podium to stimulate the political support for walking and cycling successfully.

## C. Recreational infrastructure

10. The city of Batumi is currently developing appropriate infrastructure for recreational cycling as a means of attracting tourists. The boulevard (boardwalk) along the beach is made up of a cycling path and a pedestrian path, both of which are well-constructed and well-lit for safety. However a more extensive network and greater public awareness of the benefits of cycling and walking would allow for a wider usage during the tourist season and off-season. The boardwalk was started in 1880 and has developed gradually into a large park several kilometers long. The current plans are to extend the boulevard to the South, almost to the Turkish border (20 kilometers) including a bridge with a span of 800 meters (including a pedestrian lane 10 meters wide and a cycling lane 5 meters wide). Some tourists come to Batumi for mountain biking but no particular plans have been developed for this target group.

#### D. The cycling network

11. Aside from recreational cycling, cycling in the city by tourists and inhabitants is used as a means of transport in order to reduce car traffic in the city. Difficulties were encountered in designing infrastructure suitable for cyclists in the narrow streets of the old city and in the adjoining neighbourhoods next to the boulevard. However, there is a strong political will to improve the cycling network and to increase cycling. The Tourist office is planning to import 200 bicycles to develop a bike rental system wherein bicycles are placed at several major hotels to be rented by tourists.

#### E. Technical assistance

12. During the technical visit it became increasingly clear that there was a need for further technical assistance in planning the bicycling network for the city of Batumi. Discussions

with the architect of the City of Batumi focused on the old town where there was sometimes very little space available between the houses. It was decided to allow one direction of traffic for cars in the centre of the old town and that not all streets would have dedicated paths for bicycles. In the streets that do have dedicated lanes for bicycles, the lane against the traffic direction will be separated from the road by a low barrier. In the direction of car traffic, cyclists would have a lane where trucks would ride as well. The system is based on that used in the Netherlands where the bicycles are in the majority and cars are allowed to drive, but only as guests. In the roads with separate lanes for bicycles, car parking will be prohibited. In the other roads car parking will be available. Adjacent to the old city centre car park facilities will be built for extra car parking space.

- 13. In the area next to the boulevard adjacent to the old city the roads are wider and discussions with the local architect centered on the possibility for a cycling network here. In this area, reduced speed is a requirement as well in order to reduce risk (severity of injury) at the junctions if a collision occurs. Only car traffic having a destination in the area and no through traffic may use these roads. In order to stimulate through traffic to use the larger roads some adjustments in the one-way-directions are still required.
- 14. In the first instance, the municipality planned to limit the area where bicycle tracks would be built from the neighborhoods just next to the boulevard to the second main road, an area extending to approximately 500 meters from the boulevard. At these distances, walking is almost as fast as cycling and therefore cycling will not increase drastically. By extending the cycling infrastructure in a wider area, cycling can compete with walking. Another important effect is that tourists will be attracted to hotels in a larger area in the city. Thus more people can be involved in the tourist industry and can make a living from serving the needs of tourists.
- 15. Recommendations for next steps include increasing the number of bicycles in the city and to use rental systems where feasible. Professionals should also be encouraged through policy to use bicycles, including police, postman, couriers between offices, doctors, etc. Maintenance in parks and pedestrian areas can also be done with cargo bicycles rather then with vehicles.

# IV. Action points for policymakers and local actors

- 16. The workshop participants discussed in detail the technical requirements for safe and healthy walking and cycling in Batumi and shared experiences from their countries and organizations on the promotion of non-motorized transport and its positive contribution to health, sustainable mobility and economic development through tourism. The following policy directions were underlined as important aspects to emphasize in future planning:
- (a) Create opportunities for community outreach and awareness-raising, e. g. through exercises such as the Walking School Bus to reach children and parents and to

sensitize them to THE issues and promotional rallies or events that attract road users as well as cyclists and pedestrians to promote safer walking and cycling;

- **(b) Make good use of the health argument**: as health and physical activity aspects of transport are often overlooked in THE debate. WHO recommendations on physical activity for example, can create political momentum among governments and civil society. This is particularly important as non-communicable diseases are on the rise and transport-related health effects contribute substantially to this rise. This can also be done by using the local and national health care systems and promoting public awareness through these.
- (c) Maximize existing assets of the local environment: a successful walking and cycling strategy needs to aim for striking a balance between adequate infrastructure, awareness raising and promotion. For this it is important to work with what is already in place and focus on improving the missing parts in order to create urban environments that are safe, accessible, convenient, comfortable and attractive for walking and cycling.
- (d) Focus on the green economy and the need to highlight the win-win-win (health, environment and economic) situations that can be created through walking and cycling in cities. This could also lead to and help in engaging international financial institutions (IFIs) to further invest in walking and cycling instead of only traditional road infrastructure.
- (e) Support local actions and their implementation: while it is necessary to create national action plans on THE, to avoid duplication of efforts and ensure good coordination, it is not necessary to wait for such processes to start. By tapping into local expertise and enthusiasm ("local champions"), concrete actions can lead to visible results at local level and attract national attention. These can serve as good practice to motivate other regions and cities to take similar actions. Exchange of local experience at the international level can further strengthen local expertise (e.g. through THE PEP workshops and THE PEP Partnership).

#### Annex I

#### FINAL PROGRAMME















# THE PEP Workshop on SAFE AND HEALTHY WALKING AND CYCLING IN URBAN AREAS

30 September - 1 October 2010, Batumi (Georgia)



Organised under the Transport, Health and Environment Pan-European Programme (THE PEP) in cooperation with the Ministry of Labour, Health and Social Affairs, Ministry of Environmental Protection and Natural Resources, Ministry of Regional Development and Infrastructure of Georgia and the City of Batumi, with support from the Governments of Austria and Switzerland

| Wednesday, 29 September 2010 |  |  |
|------------------------------|--|--|
|                              | Arrival of participants                                      |  |
| 19:00 – 21:30                | Welcome dinner at "Adjara House" restaurant on New Boulevard |  |
| Thursday, 30 September 2010  |  |  |
| 9:00-9:30                    | Registration   |  |
| 09:30 – 10:15                | Official Opening   |  |

|               | <ul> <li>Welcome remarks by the host country (George Khachidze, Minister of Environment protection and natural resources, Georgia, Robert Chkhaidze, Mayor of Batumi)</li> <li>Welcome remarks by THE PEP Secretariat (Christian Schweizer, World Health Organization, Regional Office for Europe (WHO/Europe and Brinda Wachs, United Nations Economic Commission for Europe (UNECE)</li> <li>Passing the baton: from Skopje to Batumi (Mihail</li> </ul> |  |  |
|---------------|--|--|--|
|               | Kochubovski, (Chief of Department of water safety and<br>environmental sanitation, Institute of Public Health, The<br>former Yugoslav Republic of Macedonia; Robert Chkhaidze,<br>Mayor of Batumi  |  |  |
| 10:15- 11:00  | SESSION 1: Setting the scene – the Batumi experience   |  |  |
|               | Moderator: George Zedginidze, Deputy Minister, Ministry of Environment Protection and Natural Resources of Georgia   |  |  |
|               | Walking and cycling potential in Batumi:   |  |  |
|               | Batumi: Cycling capital of the Black Sea 2011? (Henk   |  |  |
|               | Hendriks, Fietsersbond , Netherlands)  |  |  |
|               | Planning of bicycle lanes in Batumi (David Zoidze, Chief   |  |  |
|               | Architect, City of Batumi)   |  |  |
|               | <ul> <li>Perspectives of tourism development in Adjara: Project</li> <li>"Bike Pass" (Teimuraz Diasamidze, Head of Tourism and</li> </ul>  |  |  |
|               | Resorts Department of Adjara)  |  |  |
|               | Questions from the floor/discussion  |  |  |
|               | Press conference   |  |  |
| 11:00 – 11:45 | Coffee break   |  |  |
| 11:45-13:00   | SESSION I: Setting the scene – the Batumi experience (continuation)  |  |  |
|               | Moderator: George Zedginidze, Deputy Minister, Ministry of Environment Protection and Natural Resources of Georgia   |  |  |
|               | Walking and cycling in Georgia:  |  |  |
|               | <ul> <li>Road safety state policy (Mamuka Chikhladze, Main Specialist of Transport Policy Department, Ministry of Regional Development and Infrastructure of Georgia)</li> <li>Road transport and atmospheric air pollution in Georgia (Noe Megrelishvili, Senior Specialist of the Air Protection Division of the Department of Integrated Environmental Management, Ministry of Environment Protection and Natural Resources of Georgia)</li> </ul>      |  |  |

|               | <ul> <li>Physical activity and health benefits from walking and cycling in urban areas (Eddy L. Engelsman, Technical Officer, Department of Chronic Diseases and Health Promotion, World Health Organization)</li> <li>The health benefits of physical activity: What can be done in Georgia to reduce several chronic diseases and premature death? (Manana Juruli, Senior Scientist-Toxicologist, N. Makhviladze S/R Institute of Labour Medicine and Ecology, Ministry of Labour, Health and Social Affairs of Georgia)</li> <li>Questions from the floor/discussion</li> </ul> |
|---------------|--|
| 13:00 – 14:00 | Lunch break  |
| 14:00 – 15:00 | SESSION II: Laying the groundwork - policy, legislation and institutions to support infrastructure and planning  Moderator: Mihail Kochubovski, Chief of Department of Water safety and environmental sanitation, Institute of Public Health, The former Yugoslav Republic of Macedonia  |
|               | <ul> <li>The French challenge: Promoting safe and physically active mobility through policies and actions (Caroline Paul, Ministry of Health, France)</li> <li>Promoting cycling - a "must have" of sustainable urban mobility – Austrian good practice examples (Helmut Koch, Program Manager of klima:aktiv mobil programme for cities, Austria)</li> <li>An integrated policy approach to walking and cycling: (Francois André, Federal Public Service Health, Food Chain Safety and Environment, Belgium)</li> <li>Questions from the floor/discussion</li> </ul>              |
| 15:00 – 15:45 | SESSION III: Investing in walking and cycling: win-win-win for health, environment and economic development  |
|               | Moderator: Mamuka Chikhladze, Ministry of Regional Development and Infrastructure of Georgia   |

|                        | <ul> <li>Health Economic Assessment for Cycling         (HEAT)(Christian Schweizer, Technical Officer, WHO         Regional Office for Europe)</li> <li>Investing in cycling = saving health costs and boosting         regional economy and green jobs (Robert Thaler,         Federal Ministry of Agriculture, Forestry, Environment         and Water Management, Austria)</li> <li>Lessons from international experiences: how to use the         money? (Hubert Peigne, Expert, Ministry of Ecology,         Energy, Sustainable Development and the Sea, France)</li> <li>Questions from the floor/discussion</li> </ul> |  |
|------------------------|--|--|
| 15:45-16:00            | Coffee break   |  |
| 16:00 – 18:00          | Excursion: Discovering Batumi's walking and cycling potential and awareness-raising rally (Batumi City Council, Tourism and Resorts Department of Adjara and others)   |  |
| 18:00                  | Dinner hosted by the Government of Georgia   |  |
| Friday, 1 October 2010 |  |  |
| 09:00 – 10:45          | Launch of 1 <sup>st</sup> Walking Bus in Batumi <sup>1</sup>   |  |
| 10:45-11:00            | Coffee break   |  |
| 11:00 – 12:30          | SESSION IV: Role of civil society, media and schools   |  |
|                        | Moderator: Francois André, Federal Public Service Health, Food Chain Safety and Environment, Belgium   |  |
|                        | <ul> <li>Engaging youth in promoting walking and cycling         (Christian Schweizer, Technical Officer, World Health         Organization Regional Office for Europe; Alina         Beznehar and Marika Tsereteli, CEHAPE Youth         Representatives)</li> <li>The importance of road safety in walking and cycling         (Eka Laliashvili, Road Safety Association, Georgia)</li> <li>Awareness-raising and the role of media in promoting         walking and cycling (Kateryna Malkova, Projects</li> </ul>  |  |

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<sup>&</sup>lt;sup>1</sup> For information on examples of Walking Bus see: <a href="http://en.wikipedia.org/wiki/Walking\_bus">http://en.wikipedia.org/wiki/Walking\_bus</a>; http://www.brightkidz.co.uk/about-us/about-us.html

|               | <ul> <li>Manager, Charity Information Center "Green Dossier" Kiev, Ukraine)</li> <li>Government support for awareness-raising on walking and cycling (Thorben Prenzel, Project Coordinator ZEM, German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany)</li> <li>The role of environmental NGOs in promoting walking and cycling (Daniel Mourek, Czech Environmental Partnership Foundation, member of the managing committee of the European Greenways Association and Central and East European Greenways coordinator)</li> <li>Cycle for your health and environment (Jumber Lezhava,</li> </ul>   |
|---------------|---|
|               | International World Travelers Organization President, UNESCO citizen & Sportsman)  Questions from the floor/discussion  |
| 12:30 – 14:00 | Lunch break   |
| 14:00 – 15:30 | SESSION V: Making it happen! Walking and cycling in urban areas across the ECE-WHO/Europe region  Moderator: Robert Thaler, Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria  |
|               | <ul> <li>Examples from Swiss urban areas (Julian Baker, Special Department for Bike and Pedestrian Traffic, City of Bern)</li> <li>Examples from Latvia: Riga City council initiatives (Askolds Klavins, Deputy Director of Housing and Environment Department, Riga City Council, Latvia)</li> <li>Perspectives of countries with economies in transition (Aleksandr Borovikov, Chairman of Minsk City Committee, Ministry of Natural Resources and Environmental Protection of Belarus)</li> <li>Modern developments in the organization of foot and bicycle movement with application of actual methods of light, color and a sound. (Teimuraz Jorjadze, Tbilisi State Academy of Art, Georgia)</li> </ul> |
|               | Questions from the floor/discussion   |
| 15:30 – 16:00 | Coffee break  |
| 16:00 – 17:00 | SESSION VI: Key messages and action points for policymakers  Moderator: Eddy L. Engelsman, Technical Officer, Department of   |

|               | Chronic Diseases and Health Promotion, World Health Organization,<br>Headquarters, Geneva  |
|---------------|--|
|               | <ul> <li>Building on the Action Points from Pruhonice (Sept 2009)</li> <li>Next steps: Passing the baton and monitoring progress</li> <li>Questions from the floor/discussion</li> </ul> |
| 17:00 – 17:30 | Closing statements by the host country and secretariat   |
| 18:00 -20:00  | Dinner hosted by the Government of Georgia   |
| 20:00         | Transfer to Tbilisi airport  |

# Annex II

# Presentations made at THE PEP Workshop in Batumi

http://www.unece.org/thepep/en/workplan/urban/batumi\_docs.htm

| Making THE Link in Batumi: The Transport, Health and Environment Pan-European Programme by Brinda Wachs, UNECE  | <b>.</b>  | ENG | - |
|---|-----------|-----|---|
| Batumi cycling capital at the Black Sea 2011?<br>by Henk Hendriks, Project manager, Cyclist Union   | <u> </u>  | ENG | - |
| Planning of bicycle lanes in Batumi<br>by David Zoidze, Chief Architect, City of Batumi   | <u> </u>  | ENG | - |
| Planning of bicycle lanes in Batumi<br>by David Zoidze, Chief Architect, City of Batumi   | <u>.</u>  | ENG | - |
| Perspectives of tourism development in Adjara: Project "Bike Pass" by Teimuraz Diasamidze, Head of Tourism and Resorts Department of Adjara   | Å         | ENG | - |
| Road safety state policy<br>by Mamuka Chikhladze, Main Specialist of Transport Policy<br>Department, Ministry of Regional Development and Infrastructure of<br>Georgia  | <b>7.</b> | ENG | - |
| Road transport and atmospheric air pollution in Georgia<br>by Noe Megrelishvili, Senior Specialist of the Air Protection Division<br>of the Department of Integrated Environmental Management,<br>Ministry of Environment Protection and Natural Resources of Georgia                                 | <b>1</b>  | ENG | - |
| Physical activity and health benefits from walking and cycling in urban areas by Eddy L. Engelsman, Technical Officer, Department of Chronic Diseases and Health Promotion, World Health Organization   | <b>1</b>  | ENG | - |
| The health benefits of physical activity: What can be done in Georgia to reduce several chronic diseases and premature death?  by Manana Juruli, Senior Scientist-Toxicologist, N. Makhviladze S/R Institute of Labour Medicine and Ecology, Ministry of Labour, Health and Social Affairs of Georgia | Pu-       | ENG | - |
| The French challenge: Promoting safe and physically active mobility through policies and actions Caroline Paul, Ministry of Health, France  | <b>.</b>  | ENG | - |
| Promoting cycling - a "must have" of sustainable urban<br>mobility - Austrian good practice examples<br>by Helmut Koch, Program Manager of klima:aktiv mobil programme<br>for cities, Austria   | 2.        | ENG | - |
| An integrated policy approach to walking and cycling<br>by Francois André , Federal Public Service Health, Food Chain Safety<br>and Environment, Belgium  | <b>.</b>  | ENG | - |
| Health Economic Assessment for Cycling<br>by Christian Schweizer, Technical Officer, WHO Regional Office for  | <b>.</b>  | ENG | - |

# Europe

| Investing in cycling = saving health costs and boosting regional economy and green jobs by Robert Thaler, Head of Division Transport, Mobility, Human Settlement and Noise, Austrian Ministry for Agriculture, Forestry, Environment and Water Management | <u>.</u> | ENG | -   |
|---|----------|-----|-----|
| Austrian Masterplan for Cycling<br>by Robert Thaler, Head of Division Transport, Mobility, Human<br>Settlement and Noise, Austrian Ministry for Agriculture, Forestry,<br>Environment and Water Management  | <b>2</b> | ENG | -   |
| Lessons from international experiences: how to use the money? by Hubert Peigne, Expert, Ministry of Ecology, Energy, Sustainable Development and the Sea, France  | <b>.</b> | ENG | -   |
| Engaging youth in promoting walking and cycling<br>by Christian Schweizer, Technical Officer, World Health Organization<br>Regional Office for Europe; Alina Beznehar and Marika Tsereteli,<br>CEHAPE Youth Representatives                               | <b>.</b> | ENG | -   |
| The importance of road safety in walking and cycling by Ekaterine Laliashvili, Road Safety Association, Georgia   | PUE      | ENG | -   |
| Awareness-raising and the role of media in promoting walking and cycling by Kateryna Malkova, Projects Manager, Charity Information Center "Green Dossier" Kiev, Ukraine  | <u> </u> | -   | RUS |
| Government support for awareness-raising on walking and cycling by Thorben Prenzel, Project Coordinator ZEM, German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany   | <b>.</b> | ENG | -   |
| The role of environmental NGOs in promoting walking and cycling by Daniel Mourek, Czech Environmental Partnership Foundation, member of the managing committee of the European Greenways Association and Central and East European Greenways coordinator  | <u>.</u> | ENG | -   |
| <b>Examples from Swiss urban areas</b> by Julian Baker, Special Department for Bike and Pedestrian Traffic, City of Bern  | A        | ENG | -   |
| <b>Examples from Latvia: Riga City council initiatives</b> by Askolds Klavins, Deputy Director of Housing and Environment Department, Riga City Council, Latvia   | , Pur    | ENG | -   |
| <b>Examples from Latvia: Riga City council initiatives</b> by Askolds Klavins, Deputy Director of Housing and Environment Department, Riga City Council, Latvia   | PU       | -   | RUS |
| Modern developments in the organization of foot and bicycle movement with application of actual methods of light, color and a sound by Teimuraz Jorjadze, Tbilisi State Academy of Art, Georgia   | <u>-</u> | ENG | -   |
| <b>Healthy walking and cycling in Skopje</b><br>by Prof. Mihail Kochubovski, Institute of Public Health of the Republic   | <b>.</b> | ENG | -   |

of Macedonia