

# Active Transport Research in Low- and Middle-Income Countries

A report summarizing key takeaways and  
discussions from a two-day workshop in  
June, 2013 in Washington, D.C., USA



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## EXECUTIVE SUMMARY

In June 2013 EMBARQ, a program on cities and transport of the World Resources Institute and the Non-Communicable Diseases Prevention program at the International Development Research Centre of Canada (IDRC-NCDP) hosted a workshop on Active Transport Research Needs and Opportunities in Low- and Middle-Income Countries (LMICs) in Washington, District of Columbia, USA.

The general objective of the event was to identify the research needs and opportunities that could support policies and inter-sectoral actions that increase active transport in low- and middle-income countries. The workshop focused on discussion between around 20 expert participants to identify evidence gaps from the local to global level. The participants had substantial experience in non-motorized transport strategies, funding and projects on this topic in LMICs, ties to the health sector, and the use of active transport for the prevention of non-communicable diseases (NCDs). This report provides a description of the workshop, the specific goals, methodology, and a synopsis of the key discussion points and takeaways.

The rationale for holding such a workshop includes the following:

- **Physical inactivity is a growing global health problem.** Nearly 3.2 million deaths from NCDs are attributed globally to physical inactivity. Walking and bicycling, referred to as active transport, can be common ways for people to reach the levels of physical activity recommended by the World Health Organization.
- **LMICs are seeing increased physical inactivity.** In LMICs people use active modes at fairly high rates. However, motorization, poor city planning, social stigmas and hazardous air quality are deterring people from daily activity, thereby emphasizing the importance of the relationship between transport and the built environment.
- **A call from global leaders.** Among other international calls for action, in a General Assembly declaration from September 2011, the United Nations has called upon governments to act to address non-communicable diseases, citing physical activity through urban design and transport as a key area of intervention.

The workshop sought to view physical activity from the lens of how research can move decision-makers and make change happen. The event first concentrated on sessions that reviewed and discussed: 1) the policies and strategies related to active transport; 2) what influences decision-makers in local, state, national governments and multi-lateral development banks; and 3) what research has or has not been shown to influence decision-makers, strategies and policies. Some of the key takeaways included the following:

- **A lack of research provides little information for action.** There is little, and in some countries, no existing body of research on active transport as it pertains to physical activity, let alone basic baseline information. In some countries, walking is not even surveyed as a mode of transport. Though research from developed countries is useful, there is a great need for local-context research in LMICs.
- **Policy and decision-makers need information that suits their needs.** Many participants and much of the discussion included points on the need to connect active transport to economic and quality of life impacts, and to complement other issues important to decision-makers and cities, such as climate change, traffic safety, personal security, air quality, traffic congestion or social equity.
- **Practical evidence is needed.** Useful research should provide practical evidence for how active transport can be successful – and connect to current developments such as new Bus Rapid Transit (BRT), parks and public spaces, bicycle sharing in LMICs, different types of urban designs, both existing and new that may hinder or help walkability, transit or car use.

Based on these and other points, the workshop then moved towards identifying key areas of research that can help improve active transport and foster physical activity in LMICs. While there are other areas that were mentioned, the group honed into three general areas of need as follows:

Table 1. Key research areas and questions	
	Research questions
<b>Impact &amp; Evaluation</b>	What are the economic impacts and benefits from physical activity from active transport? What is the impact of active transport in LMICs on health and premature deaths? What tools can be developed to measure lives saved and economic benefits? How can this impact be connected to other major issues such as traffic safety, air quality, climate change and social equity?
<b>Political Economy</b>	What characterizes a good public policy in regards to active transport and communities? What are the policies that have already been implemented in LMICs? Who is involved in policy-making and implementing policies?
<b>Urban Design</b>	What is the practical impact or evidence of providing facilities for walking and bicycling? What specific attributes of active transport facilities, mass transport and the built environment can help foster physical activity?

The workshop concluded with a discussion on next steps. The group identified the following key activities, and IDRC and EMBARQ, at the time of this report, are coordinating on how to proceed.

- **Journal article.** EMBARQ and IDRC will coordinate a possible journal article to outline the issue of active transport research in LMICs, and suggest a strategy for research funding in the area.
- **Conference abstract.** EMBARQ and/or IDRC will coordinate with one or several participants on a conference abstract or session.
- **Networks/communications.** EMBARQ, IDRC and participants will distribute the above and other information regarding active transport research, projects and policies. This includes blog posts on the EMBARQ blog, thecityfix.com, production of an IDRC informational handout on active transport, use of the WRI-EMBARQ website and distribution of these and other items through participants and their own media, such as blogs, local news and civil society and the like.

## PART I: METHODOLOGY & OBJECTIVES

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### BACKGROUND AND RATIONALE

The importance of physical inactivity in contributing to non-communicable diseases and the need for action is laid out in the World Health Assembly-endorsed Global Strategy on Diet, Physical Activity and Health.<sup>1</sup> Physical activity is among the voluntary global targets developed as follow-up to the United Nations High Level Meeting of the General Assembly on the Prevention and Control of NCDs (10% relative reduction in prevalence of insufficient physical activity, a halt of the rise in diabetes and obesity and a 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances). The World Health Organization's 2013-2020 Global Action Plan for the Prevention and Control of Non-communicable Diseases supports the implementation of the Global Strategy on Diet, Physical Activity and Health and provides an extensive list of actions for countries to take in reducing physical inactivity.<sup>2</sup>

While the areas of tobacco use, unhealthy diet and alcohol misuse have more clearly defined actions and interventions, the scope for addressing physical activity is less clear.<sup>3,4</sup> There is a challenge when identifying the research priorities for addressing physical inactivity in LMICs, as seen in the results of global NCD research prioritization efforts where physical activity research needs are still broadly described (Table 2).<sup>5</sup> This lack of clarity is due in part to the neglect of physical activity as a global health priority<sup>6</sup> and the paucity of research evidence from LMICs on physical activity priority interventions.<sup>7</sup>

One priority intervention that has been identified for physical activity is the modification of the built environment to be more supportive, or promoting, of active transport. For instance, in an article in *The Lancet*, a group of public health researchers reviewed research on the evidence of interventions on physical activity. The study noted that “environmental and policy approaches can create or enhance access to places for physical activity with outreach activities; infrastructural initiatives through urban design of land use and planning at community and street scales and active transport policy and practices are effective.”<sup>8</sup>

In addition, governments are being called upon across the world to take action on deaths due to non-communicable diseases. In September 2011, the United Nations General Assembly adopted a declaration for action on the issue, both recognizing physical inactivity as a key problem and calling on governments to undertake “urban planning and re-engineering for active transport” as well as “increased availability of safe environments in public parks and recreational spaces to encourage physical activity.”<sup>9</sup>

Nevertheless, there are questions about what projects and initiatives exist in LMICs to promote physical activity through the built environment; what research has been conducted in the area of value; what are the key gaps, needs and opportunities; who are the key stakeholders; and what, if any, inter-sectoral collaboration or acknowledgement has occurred.

This lack of clarity emphasizes the need to confer with international experts, with the goal of better clarifying not only how research for active transport should be supported in LMICs, but also the role of research evidence in implementing specific strategies that influence the environment and physical activity levels. Establishing such evidence at this crucial time could greatly affect the health of generations to come, especially in LMICs, and could prevent, or partly prevent, the coming non-communicable diseases associated with physical inactivity.

The workshop described here aimed to begin to fill these gaps, answer key questions and set a path for a more informed strategy towards promoting physical activity through active transport and the built environment.

### GENERAL AND SPECIFIC OBJECTIVES

The following were the general and specific objectives for the workshop on active transport research.

The **general objective** was to identify the research opportunities to support active transport policy strategies in low- and middle-income countries within the context of promoting health-sector based physical activity objectives.

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**Table 2. Research priorities in physical activity in the context of NCD prevention and control**  
Adapted from Table 8 found in *A Prioritized Research Agenda for Prevention and Control of Noncommunicable Diseases (WHO)*

THEMATIC AREAS	RESEARCH PRIORITIES (top five priorities are marked with *)
<b>Identification of causes and measurement of magnitude</b>	<p>*Develop measurement and surveillance methods for physical inactivity and sedentary behaviours (using self-report, objective methods and combinations of both) to collect population prevalence and trend data and support estimates of disease burden attributable to physical inactivity and economic cost of inactivity in adults and young people</p> <p>*Define the individual, social and environmental determinants of physical activity and sedentary behaviours across the life course, with a special emphasis on critical developmental periods in early life (under 5 years), young life and adolescence (5–18 years) and in later life (over 65 years)</p>
<b>Analysis of problems and development of solutions</b>	<p>Develop economic models of structural change and behavioural programmes to demonstrate the potential benefits of specific actions to improve physical activity at the population level as well as the cost to various stakeholders</p> <p>*Test whole-of-community, multicomponent approaches aimed at increasing physical activity and reducing sedentary behaviour (e.g. individual, social, environmental and policy actions across school, primary health care, worksite, local neighbourhood settings)</p> <p>Develop methods to ensure that physical activity interventions achieve sustainable changes in behaviour</p> <p>Analyse the roles that the public and private sectors could play in improving physical activity in the community and identify potential positive contributions</p> <p>Validate criteria and simple and accurate tools for assessing physical activity levels in low- and middle-income countries</p> <p>Identify components of physical activity that should be targeted to best improve physical activity levels and help prevent weight gain</p> <p>*Carry out research to identify the most effective mechanisms for the adoption and implementation of the 2010 Global Physical Activity Guidelines in low- and middle-income countries</p>
<b>Application of solutions and evaluation of impact</b>	<p>*Evaluation prospective cohort, quasi-experimental, and opportunistic “natural experiments” involving changes in the urban and peri-urban environments, including studies of urban development, installation and modification of transport systems, changes in regulations and legislation in sectors other than health (e.g. transportation, community development, finance) to assess their impacts on physical activity and sedentary behaviours</p>

The **specific objectives** were to:

1. To identify, clarify and prioritise research needs and opportunities for enhancing policies that increase active transport in low- and middle-income countries (LMICs);
2. To identify the most appropriate research approaches to generate the needed research evidence;
3. To identify the main factors that enable or constrain the development and implementation of active transport-related policies in various LMIC contexts;
4. To identify capacity building needs among LMIC researchers necessary for advancing policy-based active transport research.

## WORKSHOP METHODOLOGY

The agenda of the workshop emphasized substantive discussions rather than presentations, lending to more of a colloquium-type format where experts come together to discuss key research and opportunities. (See full agenda in Appendix D.) A few presentations were made at the beginning by IDRC and EMBARQ, but these served the role of briefly identifying what is already known about topics around the specific objectives -- determinants of active transport, the policy options relevant to active transport and the effectiveness of various policies and interventions. A professional facilitator, Jennifer Peyser of RESOLV in Washington DC, helped aid discussion and focus on the topics at hand. Chatham House rules were agreed upon, which means participants agreed to not attribute any one quote or comment to a specific person. Therefore, this report does not cite particular comments to any attendee. In addition, the goal was for an inclusive and respectful discussion among all attendees. Tent cards and an orderly queue for commenting and questions by participants were used.

Though the focus of the workshop is on clarifying the role of research evidence in implementing specific strategies in LMICs, a significant amount of time was devoted, especially in the first day, to better understand how active transport strategies happen in various contexts. Sessions started with introductory remarks from participants with experience highly relevant to that topic, and subsequent discussions were aided by questions circulated with the agenda. Participant backgrounds included experience with multi-lateral development banks, NGOs, government agencies at the city and national level and researchers in health, physical fitness, recreation and transportation. (See Appendix C for a list of participants and their biographies.) Therefore, using this time to “get to know” and become comfortable with these different backgrounds as they relate to active transport was important. As such, discussions were structured to draw on the knowledge and experiences of different types of participants from different settings. The second day was geared more towards small group brainstorming and additional group activity to further refine ideas and priorities.



## PART II: WORKSHOP RESULTS

The following portion of this report summarizes the discussions among participants of the workshop, describing the sessions, themes and main issues covered. The below sections follow the agenda of the workshop sessions. A background on the issue of physical activity and transport in terms of existing research and current conditions in low- and middle-income countries can be found in Appendix B.

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### POLICIES AND STRATEGIES

To start off the discussion-based sessions of the workshop, IDRC and EMBARQ prepared some graphics showing a set of tables on the different policies and strategies that could or have been considered within different sectors. In this first discussion session of the workshop, the participants were to discuss what policy objectives are most essential and how research can advance action on these policies.

#### Policies and Strategies to Influence Active Transport

##### TRANSPORT

- **Transport policy** that emphasizes non-motorised transport
  - Standalone NMT policy
  - Transport policy that emphasizes integrated transport systems
  - **Guidelines** on NMT policy implementation
  - National **standard manuals** on NMT design
  - **Transport plans** that include mass transit and infrastructure for walking and cycling
  - Transport plans that develop transport systems in secondary cities
  - **Planning procedures** that require detailed studies on NMT usage patterns
  - Planning procedures that enable sufficient citizen and stakeholder engagement
  - Explicit infrastructure **maintenance procedures**, including funding mechanisms
  - Road safety action plans
  - **Legislation** to protect pedestrians from motorized traffic (e.g. speed limits)
  - **Regulations** that discourage vehicle usage (off-days according to license plate, high parking fees, surtax on gasoline)
  - **Furnishings**, such as lighting, that support personal safety
-



### CITY PLANNING & URBAN DEVELOPMENT

- **Urban development policy** that prioritizes integrated design principles, including access to NMT and mass transit and public spaces
- **Master plans** for cities that include high quality NMT infrastructure
- **Land-use policies** that encourage compact developments and mixing of residential and commercial uses
- **Design standards** to inform urban planning
- **Planning processes** that enable sufficient citizen and stakeholder engagement

### HEALTH

- National **physical activity strategy** that includes active transport as a key objective
- Strategies directed at particular populations and settings, such as active school transport
- Plans to regularly **measure** physical activity levels

### ENVIRONMENT

- **Strategies** that improve the NMT environment through urban forestry and parks
- **Policies** that consider aesthetic appeal of the pedestrian realm

### LAW ENFORCEMENT

- **Legislation outlawing encroachment** on walkways and cycle paths
- Strict **enforcement** of all legislation supporting NMT users
- **Police presence** to support personal security

### FINANCE

- Develop **integrated financing mechanisms** for NMT infrastructure provision that also support municipalities
- **Reduce incentives** to import motorcycles and cheap used cars
- **Waive import taxes** on bicycles

### CROSS-SECTORAL

- **National strategic plans** that include NMT
- Laws, regulations and policies that **foster intersectoral collaboration** or “whole-of-government” engagement
- An articulated **Health in All Policies** approach
- **Interdepartmental task forces** or committees on NMT or transport
- **Strategies and plans** that articulate departmental roles, funding mechanisms, planning processes and policies on NMT

**Figure 1. Policies and strategies to influence active transport.**

The session aimed to identify how research evidence can support development and adoption of priority policies. A description of the key takeaways and items discussed are provided below.

Several individuals agreed with the different ways policies and strategies are considered in the above tables. In addition, the following items were discussed.

- **Providing high quality transport and limit car use.** It was stressed how important growing physical inactivity can be linked to the growth in automobiles and inequality. People may not necessarily directly choose to be less physically active; they are simply buying an automobile when often the cities are being planned to favor that choice. A comment was that “you need to remove cars and make public transportation incredibly attractive to public.” There was a reply to this that indicated the idea should not be to be necessarily “anti-car” but “pro walking and bicycling.” In any case, much of problem is rooted in the conventional wisdom among policymakers, planners and engineers to plan the city for cars, without regard to active transport.
- **Land use and housing.** Participants stressed the importance of city planning, land use and housing policy.
- **Economic impact.** Experienced participants in the area of health and transportation policy indicated that economic considerations were usually the main thrust for why certain policies or strategies were undertaken. Others asked how active transport can be made interesting to investors, real estate developers, and city officials.
- **Context matters.** Experience from US and Europe doesn’t necessarily apply to LMICs. It is also important to remember that this research field is still relatively new. The literature in LMICs is only a few years old. There are few studies and there is a need to understand these relationships more in LMICs to properly inform policies and strategies.
- **Connecting to climate change.** To get attention from decision-makers, climate change has become the major factor influencing the topic in reducing cars and promoting active transport. The World Bank and UN provide grants to countries to reduce car emissions in the context of urban transport in terms of better public transport and active transport.
- **Need for practical evidence.** To change policies, participants discussed the need for more practical evidence to make actions that connect what is going on in the world today with research – perhaps projects being funded by GEF and World Bank as mentioned above or projects where NGOs are involved with cities on active transport.
- **Lack of sufficient capacity from different players.** The discussion included the topic of capacity, noting that there is a need to build on existing trends, establish evidence and practice, build relationship with organizations like WHO and establish guidelines that can be used to establish active transport policies and strategies.
- **Cultural issues and social stigmas.** There are many stigmas or cultural attitudes toward active transport that need more attention. This includes social stigmas of the poor using bicycles or the social symbol of car ownership, the role and attitudes of women being able to bicycle or walk alone in public, and the attitudes of leaders believing the path to modernity in their city is one that embraces the car.
- **Lack of interest in smaller investments.** Often pedestrian and bicycling infrastructure is low on the list of transportation priorities because they are not the big ticket items such as highways and metro projects. A metro may be built, but the pedestrian facilities around it not addressed. Policies are addressed to large projects even though there may be great benefit in policies that may cost much less when implemented.

## FUNDERS AND DECISION MAKERS

A second discussion session focused on the place of research from the viewpoint of funders and decision-makers. Three speakers from this viewpoint shared initial remarks on what influences the inclusion of non-motorised transport in projects and the wider development agenda. Group discussion built upon this and focused on what research evidence is relevant to

fundes and decision-makers. The guiding questions for group discussion included the following: 1) what has influenced active transport as a priority within your organization? and 2) from the experiences of participants within this room, what can be said about what NMT research evidence is relevant and influential to fundes and decision-makers?

The introductory comments echoed some of the sentiments from the previous session, particularly in that projects and funding are prioritized from the view of the economy, an emerging concentration on climate change, and other issues such as social equity and air quality. Stress was placed on measuring co-benefits to climate change or economic analysis. Meanwhile, others stressed that decision-makers on the local level are often drawn by projects that will be popular with the public or have great economic return. In other cases, decision-makers in local or national governments may already be in support of something, such as increasing bicycling, and will undertake policies accordingly. The officials can be seeking to bolster support of such programs and to build success in order to fulfill their agenda.

Between the introductory commenters and subsequent discussion, some examples of what research might influence decision-makers and fundes included the following:

- Measure benefits, economic and social, and the connection to health. Echoing comments also connected this to decision-making, such as integrating such measurements into cost-benefit analysis and to show a return on investment. Measuring economic benefits in a way that transport economists evaluate projects may be most evident concerning development banks.
- Develop a body of evidence that can build the case for physical activity, to raise its profile and bring it forward from a nascent stage of both research and influence on decision-makers. This seemed necessary among all decision-makers, as there was little awareness of just how important physical activity through transport could be in shaping policies and projects.
- Show the impact of active transport on other issues that are of key concern to decision-makers. This seems most evident with climate change initiatives, but other issues related to the social equity, air quality, sustainability, traffic congestion, road safety, commute times, and the like may be linked to

physical activity and active transport.

- Identify how there are inter-sectoral connections and benefits such as linking health (saving lives), the environment (reducing pollution), transport and mobility (moving people most efficiently and effectively) – find where these sector connections can be made and highlight them.
- Integrate bicycling and walking with other modes of transport. There are other projects decision-makers pursue, such as mass transit, roads and the like where active transport can be more of a factor if there is better evidence of its benefits.
- Provide relevance to the country context. Participants often stressed that solutions are needed in the context of regional or local conditions, and that decision-makers use this information when considering projects. They cannot simply apply research from the United States to projects in Africa or Asia. In addition, participants voiced that they need practical research in their own countries and connected to projects such as bicycle sharing and BRT that may show the added benefits from physical activity.
- Measure the success of projects with the public, and consider the audience and their challenges, such as mayors selecting policies. Mayors and leaders will often pursue policies that will be popular with the public or certain voting groups. Finding ways to make active transport projects or initiatives to connect with politicians and the public is a valuable approach.
- Integrate into existing processes that are used in decision-making such as environmental impact assessments where consideration of active transport health benefits could be added.

## THE ROLE OF RESEARCH IN NON-MOTORISED TRANSPORT (NMT)

This session aimed to explore and identify how physical activity evidence has and can more significantly influence NMT action. It began with three experts providing initial comments on how research related to physical activity has or has not been used to influence and guide NMT strategies and policies and was followed by a group discussion.

The key themes and other comments emerging from this discussion included the following:

- **A new area of research.** Active transport in terms of health and physical activity is a new field – only 15 years old, even in places like the United States with research only in the last few years in LMICs. There is a need for learning from research in high-income countries and adapting. There is a contextual difference but there are shared lessons on research, findings, and how these have influenced strategies and policies.
- **One piece of the pie.** Research on projects where physical activity/health benefits can be shown is crucial. There are other issues at play including environmental, social and political matters, but physical activity research can make a great contribution as one item within others. No city will focus on physical activity per se, but it may consider it within a wider array of issues. Therefore, participants noted the need to synergize with issues like climate change. Research can matter a lot. The example of Ciclovias in Latin America is showing that the research on physical activity has given these initiatives greater credibility with political leaders and the public, so providing the basic research connected to measure practical cases can be very fruitful.
- **Need for practical evidence.** Participants noted a need to seek practical evidence rather than true scientific examples. There is a need for specific answers, not “to improve streets,” “to improve designs,” but what characteristics will get people to use bike lanes, feel safer walking along city streets, access nearby parks and use public spaces, or continue using and walking to mass transit.
- **Find projects where active transport is present and make the connection.** New York City’s actions to build the High Line elevated park, or its new bicycle lanes and public plazas, are a good example. These actions are not purely linked to physical activity, though they are providing places for people to be active.
- **Integrate with other sectors.** There is a need for research that connects different sectors, including transport, the environment and health. For instance, transport research often involves household travel surveys that to some extent can show physical activity

rates.

- **Tools, methodologies and observatories.** Some participants referenced the need for certain standards, data banks on city facilities for active transport and trends for comparison, and simple information on benefits of physical activity to health. This could include information on the number of bicycle lanes in cities, characteristics of the bicycle facilities, how much bicycle parking. One example of this in regard to Bus Rapid Transit is the site [brtdata.org](http://brtdata.org) operated by EMBARQ and other partners. Others referenced the International Physical Activity and the Environment Network methodologies for broader use.

## ENHANCING THE IMPACT OF ACTIVE TRANSPORT RESEARCH

The aim of this session was twofold: first, building on the work of previous sessions, to identify priorities in active transport policies and strategies and identify influential research evidence; and second, to explore how to enhance the impact of physical activity research. Outputs from this session were meant to consolidate the conversation from the day to aid the next day’s discussions and decisions towards a research strategy. A World Café small group format was used where participants rotated in 30-minute segments in four groups covering the following: 1) Priorities for policies and strategies; 2) Identifying influential research evidence; 3) Improving engagement between health and other sectors; and 4) Barriers to and opportunities for advancing physical activity research evidence.

The following provides a summary of what was reported to the larger group at the end of the session:

### Priorities for policies and strategies

The group agreed that it is very hard to have a one-size-fits-all approach to policy and strategy. The group leader led a discussion focused on how a framework could be used that provides better context for relevant policy solutions in an inclusive, participatory fashion.

The group discussed several key policy considerations, including travel mode shares and trends, the role of private and public entities, formal vs. informal

economies, legal and institutional aspects, economic impacts, and externalities. It may also be necessary to further classify the types of strategies by topic, discipline and silos in which governments are often organized and how issues are framed.

Given the limitations, the group provided three broad categories for consideration:

- Metrics that help to promote an enabling environment and that can help lead to behavioral change, action and data;
- Effects the built environment and transportation have on behavior and the ability to make choices (i.e., if we build cities for cars, people will need cars); and
- Revision of evaluation frameworks beyond narrow benefits and costs, to include health and other important social elements.

### Improving engagement between health and other sectors

There was overall sentiment in this group for more collaborative work, and how research may make this happen, especially through comparison studies between good examples and places where collaboration is needed. Examples of this include Bogota and Cali, Colombia where there is a vision and engagement of key stakeholders from the beginning and it has helped make change. The group identified New York City's cross-sectoral work as another positive example. In particular, the Plan NYC (sustainable plan for New York City) has a vision and very strong political leadership across sectors. In many locales, this type of collaboration is difficult, though there was agreement that collaboration on the local level may be easier than the national level, lending to a preference to concentrate on city level governments. In any case, the group found a need for case studies to help understand where collaboration works well, and the idea of exploring research of where things work well and how they may be applied in the context of a low or middle income country.

### Identifying influential research evidence

The group sought to answer the question, "How can we get to the decision makers and get things done with positive results?" Overall, the group talked about a range of issues that are hard to synthesize and tried to review and suggested ideas in terms of prioritizing strategies for influential research. The key themes included the following:

- **Economic impacts and benefits** need to be measured and documented – the basis to move decision-makers. A target audience should be high-level policy-makers, the public, and grassroots groups that can make the case.
- **Show improvement in quality of life** for the general public. Decision-makers are also led by decisions that are popular with the public and if research can help show or move them towards supporting active transport as a way to improve residents' quality of life, this can be influential.
- **Baseline information.** There is a severe lack of lack information, including simple mode share data on how many people walk and bike. Sometimes, walking is not even counted as a mode. If active transport isn't counted, it doesn't count to decision-makers. Projects and research should help fill this gap. Research on active transport and health may help to fill the void as well through original research on projects and policies rather than relying on government surveys to capture walking and bicycling accurately.
- **Local and regional context.** The group identified the need to consider political circumstances (type of government, local issues) and local context of the history and current form of the city. If you don't understand the city, there is no way to influence it.
- **Tools to assess cities.** Researchers often lack the tools or frameworks for conducting influential research. For example, tools that allow researchers and practitioners to assess the built environment and how it may hinder or foster physical activity are necessary that cater to local country contexts. In addition, researchers need tools that can help measure or estimate benefits in terms of lives saved or economic return from physical activity. These tools exist in different forms, mainly geared at high-income countries, so there is a need for more globally applicable tools that go beyond the United States, Canada or Europe and into the LMICs.
- **A last overall theme** of the group was to bring people together, to document and measure success, and to study failures to determine how problems may be fixed in the future.



### Barriers to and opportunities for advancing physical activity research evidence

This group identified the key takeaways as follows:

#### Barriers:

- Lack of local data – existing data comes mostly from high-income countries.
- Lack of capacity, both at the individual and institutional levels.
- Physical activity research evidence does not meet concerns of policy-makers.
- Shifting and competing priorities within government.
- Need for funding new research, as current tools are not always applicable in LMICs.
- Other interests such as climate change and quality of life are driving decisions, and sometimes research doesn't appropriately connect to this when it could.
- A fully compelling story has not yet emerged as with other health or environment issues or as physical activity has in developed countries such as the United States.

#### Opportunities:

- Some projects, such as in Brazil have developed stronger monitoring components and there is an opportunity to build on this.
- Find projects that can be built and researched quickly to make a difference.
- Emerging research networks, both globally and within developing world (e.g. south-south), established capacity in the last few years in Latin America, research in China, India, as well as WHO collaborating centers.
- Global problems in cities such as congestion, fuel prices, and unplanned urban growth can be a way to talk about issues and find a role for research.
- Lastly, people are more connected today with social media, email and the like, and there is a chance to leverage this to get the message out now.

## RESEARCH PATHFINDING

This session was critical to the purpose of the workshop, to identify and prioritize active transport research topics that can be shaped into a strategy. The session opened with a brief review of previous discussions and presented some considerations for guidance. The session was structured to generate ideas by asking each participant to write down their suggestions for research topics related to active transport on large sticky-notes and to place them on a large wall in the conference room.

Following this, staff and the facilitator reviewed the notes with participants to cluster them into categories. (See Appendix E.) Clusters emerged in the following areas: political economy; urban design/link to mass transit; inter-sectoral linkages; capacity building; impact evaluation; behavioral analysis; economic impact; and methodologies/tools.

Based on this, a facilitated discussion narrowed these clusters into three main areas for a deeper review by small groups to identify more specific needs in these areas. These three categories were: 1) Political economy; 2) Urban design and transport; and 3) Impact and Evaluation (including economic, health, equity, etc.). The other categories were viewed to be cross cutting among the above three and to be considered within each.

Participants then divided into three groups to discuss the topics. A summary of key points and considerations by participants is provided below in the form of research questions.

**Impact & Evaluation.** This group discussion created a set of research questions oriented towards economic development, showing impact on health and ultimately, lives saved, and lastly, connecting evaluation to other issues such as road safety or climate change. These categories result from a discussion on the importance of connecting to development agencies and banks, which largely work in the area of economic development, as well as key global issues such as climate change. In addition, with philanthropic and development grants being connected more and more to results, the group discussed the need for research to demonstrate results from active transport policies and projects. City leaders are also interested in knowing the impact of their policies.

- What kind of transport scheme is going to reduce the cost of transport for poor people? How can active transport do this or aid in other transport projects to aid in this?
- What price mechanism will maximize active transport while lowering the economic cost for families? (Fuel, transport/housing/ parking/ health insurance/ etc.)
- What is the impact of active transport in LMIC on premature deaths? How can particular efforts or projects be measured or weighted on their impact on resident health? And what is the economic impact of these actions?
- How can different scenarios of land use and

transport use affect health related to physical activity, economic costs and mobility? How can these scenarios help inform decision-makers to provide more active transport?

- How can the evaluation and impact both in health and economic terms be weighed with other health issues such as air quality and road safety, as well as connected to issues such as climate change, social equity and other major policy topics?
- How can active transport help, or how can land use and transport that supports active transport be researched with regard to access to services such as school, hospital, recreation, health facilities and the like? What collective transport scheme maximizes active transport without discouraging use?

**Political Economy.** This group created a set of questions meant to be asked or answered in sequence, in a progression that research can address. The questions start with a basic one asking what is good public policy when it comes to active transport, and is followed by specific questions on what policies have been implemented, who are the players involved, what are barriers, examples that can be applied outside the local context and without this, is there practical knowledge available in LMICs.

- What characterizes a good public policy in regards to active transport and active communities?
- What are the policies that have already been implemented in LMICs, both that have failed, that have mixed results and those that are successes?
- Who were or are the players involved in the policy-making and implementing policies? Are they advocacy group and civil society; NGOs working on technical or other assistance to cities; politicians with agendas to provide things such as BRT, bicycle sharing or Ciclovias; or practitioners convincing leaders to undertake active transport policies and projects? What combination of the above players exists and is there a set of stakeholders and roles that can be identified to move active transport forward?
- What are the barriers and enablers in this process, and how can they be defined? What are the solutions to overcoming barriers and the key to success?
- What are good examples, are they applicable to other contexts, and can the capacity be built for this? What are the bad examples and what lessons are to be learned?
- What are the practical experiences of low and middle income countries with active transport?

**Urban Design.** The group focusing on urban design provided a set of specific research questions worth exploring in LMICs that mostly regards experiences with actual active transport projects and the relationship of the built environment, such as land use and neighborhood conditions. The questions also address issues of inclusiveness and equity, such as how cities can be designed to satisfy the active transport needs of women and men. Research should also be geared at filling the void in LMICs, providing context and practical evidence for policy-makers to take action, or for impact to be measured as discussed above.

- What is practical impact or evidence of providing facilities for walking and bicycling? Do they increase use, maintain current levels, are they perceived well, and the like. What has the impact been on use and demand?
- What specific attributes of facilities can make them more successful?
- What is the correlation between active mobility and safety? Or perceived safety?
- What is the impact and relationship of urban form/ built environment and active mobility? What housing or land use policies impact active communities?
- How can effective cross-sectorial cooperation impact new urban development investment? (actively invest in Active Transport) Guidelines: policy & design)
- What are the differences of active transport use in terms of neighborhood, pedestrian-scale retail versus strip malls?
- What is the link between mass transit and active transport, especially in the context of low and middle income countries where mass transit is now being changed with more BRT, metro or where new public transit is being instituted?
- How can research on urban design and transport be conducted so as to aid those conducting impact evaluations?
- What comes first, demand or supply for active transport, and in which ways can both be considered in research?
- What kinds of urban design and transport infrastructure encourage safety and more use for women, for the elderly or children and disabled? What factors into a safe and secure environment for active transport?

## MOBILIZING RESOURCES

Drawing on participants' expertise, this session aimed to establish an accurate picture of the funding landscape



for research on active transport in LMICs and identify any coordination needed between funders. The discussion mostly focused on the institutions and sources of funding that currently or could exist in the area.

In general, participants discussed the need to find results, link to economic or other important issues and raise the profile of physical activity as an important need to mobilize such resources. Below is a table of the different resources discussed and what roles they can play.

<b>Table 3. Mobilizing resources summary</b>	
Category	Notes
Multi-lateral development banks	Provide financing for projects and some grants, not necessarily for research. Concentrated on economic development, equity, climate change. Includes World Bank and regional development banks. World Bank GEF/climate action possible place to leverage research on active transport regarding projects GEF funds.
International Institutions	Provide some research, can act as leader in convening and responding to national government requests. Includes WHO, PAHO (WHO region of the Americas), the United Nations Development Programme, UN-HABITAT, etc. Could be partners in creating guides, standards and assistance to cities, countries.
National governments	Two categories within national governments, they are both funders of projects, policymaking entities and some have funding for research in public health.
Cities	Funding or implementing projects on the ground, public health agencies can also play monitoring role, possible partners for research. New York City provided as example of cross-sector collaboration, Bogota and Cali in Colombia.
Foundations	Provide funding for research or assistance to NGOs assisting cities. Several large foundations and philanthropies operation the health area, though physical activity may not be priority area. However, other issues may be related such traffic safety or air quality that are related to transport.
Private sector	Private companies can help leverage resources, some may have related goals to their commercial interests. Threat of interference of commercial interests (e.g. soda companies) Others have private corporate foundations. Examples include Volvo VREF funding of the Centers of Excellence.
NGOs	Civil society groups that aid or advocate on behalf of active transport. Examples include EMBARQ or ITDP that assist or help in more of a policymaking and technical assistance role while others are more advocacy-oriented such as Transporte Ativo in Rio de Janeiro, a group that advocates for more facilities and favourable policies for active transport.

## NEXT STEPS

The workshop ended with a discussion led by IDRC of what next steps are possible. This includes products that will result from the workshop, future communication and networks for the participants. No particular product or item was agreed but there was general consensus that a combination of the following is appropriate and feasible given the participants' commitments to contributions. The ideas presented here also include suggestions that were provided in the workshop evaluation form participants completed.

<b>Table 4. Follow up items</b>	
<b>Product/Follow-up item</b>	<b>Examples/notes</b>
<b>Journal article.</b> Summarize workshop, issue and provide a strategy for active transport research that can be shown within various fields and sectors.	<ul style="list-style-type: none"> <li>• Audience: researchers, government/donors, foundations, community?</li> <li>• Health, transport, urban planning/design, environment</li> <li>• Journal piece (for public media)</li> <li>• Define active transport in view of different countries, disciplines, etc. (Canadian embassy note in country? E.g. Columbia)</li> <li>• Raise profile of issue set of funders within donor agencies.</li> </ul>
<b>Networks.</b> Take advantage of existing networks on physical activity, transport and the like.	<ul style="list-style-type: none"> <li>• Global physical activity Network: ISAPH: councils for environment &amp; physical activity (CEPA).</li> <li>• IPEN</li> <li>• Brazilian Society, RAFA/PANA (Victor. M)</li> <li>• Uganda sustainable transport network</li> <li>• Center for logistics &amp; transport</li> <li>• African Physical Activity Network</li> <li>• Institute Health of Mexico</li> <li>• IPS</li> <li>• Blogs</li> </ul>
<b>Conference Abstract.</b> Prepare a conference poster, abstract or session on research for active transport in LMICs	<ul style="list-style-type: none"> <li>• ICPAPH-also opportunity for conference symposium</li> <li>• Institute of Health of Mexico</li> <li>• Transportation Research Board, January</li> <li>• Velocity</li> <li>• International society for urban health (2014, March 4-7, UK)</li> </ul>
<b>Use of workshop email list</b>	<ul style="list-style-type: none"> <li>• Conference &amp; proposal ideas</li> <li>• Best practices</li> <li>• Cross-country analyses</li> <li>• Sharing funding ideas, resource</li> </ul>

## ABOUT IDRC AND EMBARQ/WRI

Non-Communicable Disease Prevention is a program (NCDP) at the International Development Research Centre (IDRC), a development research funding agency based on Ottawa, Canada. Now in its fifth decade, IDRC supports research and builds capacity of people and institutions in developing countries to promote growth and development. The aim of IDRC is to create innovative, lasting local solutions that build 'healthier, more equitable, and more prosperous societies.' IDRC works with researchers as they confront the challenges of the 21st century within their own countries and contribute to global advances in their fields. NCDP supports research in low- and middle-income countries (LMICs) aimed at informing policy-based, population-wide strategies around tobacco control, healthy diets, alcohol control and physical activity for the prevention of non-communicable diseases (cancers, diabetes, cardiovascular diseases and chronic obstructive respiratory diseases).

The World Resources Institute (WRI) was established in 1982, and its mission is to move human society to live in ways that protect Earth's environment and its capacity to provide for the needs and aspirations of current and future generations. WRI spurs progress by providing practical strategies for change and effective tools to implement them. EMBARQ was founded in 2002 as WRI's center for sustainable transport, to catalyze and implement environmentally, socially and financially sustainable urban transportation solutions to improve quality of life in cities. EMBARQ aims to deliver game-changing solutions that inspire broad adoption by other cities, conduct research, disseminate best practices, and inform national and international transport and development agendas. EMBARQ works with local and national governments, transit agencies, international organizations, development banks, NGOs and academics to help implement sustainable transport and urban development solutions. One key pillar of this work is to improve public health through improved traffic safety, walking and bicycling to foster physical activity, and reducing exposure to air pollution.

## APPENDIX A: WORKSHOP EVALUATION RESULTS

EMBARQ and IDRC distributed a workshop evaluation form at the end of the workshop, asking participants to review the event in its content, organization, and topics. Overall, participants were positive in their assessment of

the workshop, satisfaction with meeting objectives and the organization. (See graphs below.)

As part of this report, some of the qualitative responses to questions in the evaluation form are provided below.

### **Which topics or aspects of the workshop did you find most interesting or useful?**

The responses to this question tended to regard the workshop's focus on identifying research, providing an exchange with other participants from around the globe, a few specific topic areas of key interest, the funders and decision-makers section, and that the workshop had participants from several different sectors.

- **Research.** Evaluations indicated that there was key interest in finding research questions, new opportunities, identifying topics to pursue, the role of researching policy and how to design these activities.
- **Exchange.** Evaluations indicated that several participants valued hearing the experience of those in other countries, of researchers on physical activity, interaction with a diverse set of people from different sectors, and helping understand their experiences.
- **Topics.** Several evaluations note the usefulness of learning about the relationship of different topics to physical activity, including the role of bicycles and physical activity, traffic safety, urban design and economic impact in LMICs.
- **Organization.** Some evaluations noted that the open discussion format was useful, with less presentations and more participation from the diverse backgrounds of those present.
- **Funders and decision-makers.** One participant noted the usefulness of learning more about active transport from the perspective of funders and decision-makers.

### **If the workshop did not achieve its objectives, what ways could have made this more likely? How do you think the workshop could have been made more effective?**

There were not very many answers to these questions; however, participants did have some thoughts on improving the event and how it could achieve objectives.

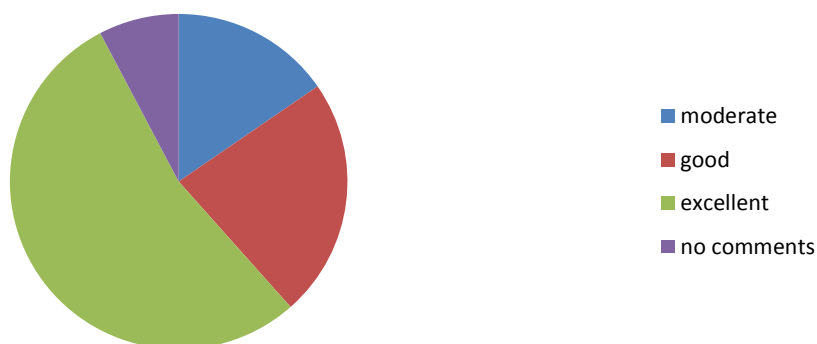
On organizational matters, comments ranged from needing more time for presentations, providing more

breaks, more time for discussion of proposals, and additional small break-out groups.

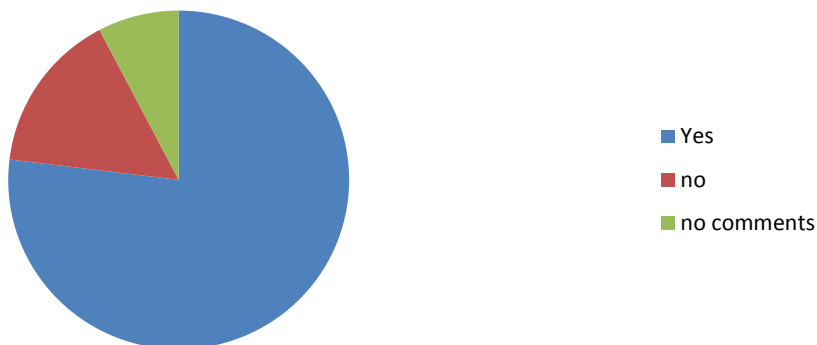
On achieving the objectives, one comment was that active transport research related to physical activity does not yet have a clear focus and could be narrowed down to a few topics that are more feasible to evaluate. Another comment was that it would have been helpful to have clearer ideas presented before the workshop as the ideas generated needed some boundaries.

Below are the quantitative responses assessing the overall event, its achievement of objectives, and organization.

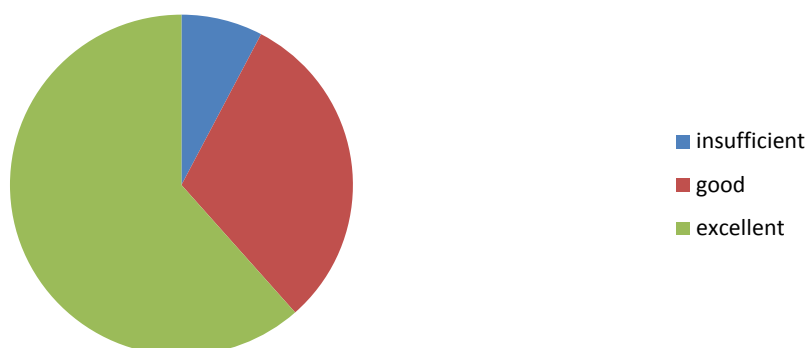
### What is your overall assessment of the event?



### Did the workshop achieve its objectives?



### Organization of the event



## APPENDIX B: BACKGROUND AND CURRENT CONDITIONS OF ACTIVE TRANSPORT

According to the World Health Organization, physical inactivity is a global health problem attributable to approximately 3.2 million deaths each year.<sup>10</sup> While the issue may have been perceived as a problem of high-income countries, especially the United States, it is of a global scale, with around 31% of worldwide adults insufficiently active – and low- and middle-income countries bearing much of the problem. The problem may even be greater among children, as one study of 34 mostly non-high-income countries found that the great majority of students did not meet physical activity recommendations.<sup>11</sup>

Physical activity has been proven to decrease the risk of cardiovascular disease mortality, colon cancer, non-insulin dependent diabetes mellitus, and high blood pressure. The lack of physical activity is also a risk factor for being overweight or obese.<sup>12</sup> Excess weight is an established risk factor for ischemic heart disease, hypertension, stroke, dyslipidemia (high blood cholesterol), osteoarthritis, gall bladder disease, as well as several cancers.<sup>13</sup> One study showed that obesity (defined as a body mass index, or BMI higher than 30) can decrease life expectancy by up to 7 years.<sup>14</sup> (Studies sometimes focus, as shown in this paper, on the outcome of obesity directly, rather than on physical inactivity, one of its causes.)

To reduce the risk of these outcomes, the WHO officially recommends that adults aged 18 to 64 should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or do at least 75 minutes of vigorous-intensity activity throughout the week, or the combination thereof.<sup>15</sup> For those 65 years old and over, it recommends this same level plus urging an additional 150 minutes of moderate activity for more health benefits. For children, the WHO recommends 60 minutes daily of moderate to vigorous activity. Additional studies have noted that physical activity even below these levels can reduce mortality.<sup>16</sup>

The fact that physical activity affects so many health outcomes can make it ideal for improving health on a

large scale. Public health researchers have noted that “few if any other health interventions are this broadly beneficial and have so few unwanted side effects – key reasons why health professionals are so keen to promote physical activity.”<sup>17</sup>

A study across 14 countries as well as 50 U.S. states and 47 of the 50 largest metropolitan areas in the U.S. suggested statistically significant relationships between walking, cycling, and health at the country, state, and city levels.<sup>18</sup> The study showed that countries with higher levels of walking and cycling tended to have lower levels of adult obesity, that in U.S. cities rates of walking and cycling to work were associated with adults achieving recommended levels of physical activity and less obesity and diabetes among adults. The results, although not causal, were consistent with the hypothesis that active travel encourages physical activity and decreases rates of obesity and diabetes. The authors also note that the greatest strength of the analysis was that it “showed that the relationship between active travel and health was discernible at 3 different geographic levels: international, state, and city,” an important point in considering the development of policies to promote active transport globally.

On a basic level, the research shows people to be more active who walk, bike and use mass transit as their main form of travel, with increased motorization leading to less activity. A study by the NYC Department of Health and Mental Hygiene showed that New Yorkers who walk or bike to work get 40 minutes more physical activity than those who drive or ride taxis. Those who use mass transportation get about 30 minutes more physical activity than those using private vehicles.<sup>19</sup> A study from China reviewed the effects of exercise, walking, and cycling for transportation, and also non-exercise physical activity on mortality for women in Shanghai. The researchers found that exercise and cycling for transportation were strongly correlated with reductions in all-cause mortality, while walking for transportation also had positive health effects.<sup>20</sup> Even considering other health issues, the physical activity benefits have been shown to be significant. A study in the Netherlands pointed out that the health benefits from physical activity achieved by switching from driving to biking far outweigh the health risks associated with road safety and exposure to air pollution.<sup>21</sup> The study indicated that the beneficial effects of increased physical activity are substantially larger (3–14 months gained) than

the potential mortality effect of increased inhaled air pollution doses (0.8–40 days lost) and the increase in traffic accidents (5–9 days lost). Societal benefits are even larger because of a modest reduction in air pollution and greenhouse gas emissions and traffic accidents. Another study reviewing strategies to reduce greenhouse gas emission through more active travel in London and Delhi – two very different places in economic development – found that policies to increase active urban travel, and discourage travel in private motor vehicles would provide larger health benefits than would policies that focus solely on lower-emission motor vehicles.<sup>22</sup>

### **BARRIERS AND FACILITATORS TO NMT**

Despite these benefits, there are several barriers and facilitators of being active in cities, especially walking and bicycling, including the built environment and urban form, air quality or the lack thereof, social norms, personal security and safety, and tax or other policy incentives that promote one form of transportation over the other.

Several studies have also shown that the density of the built environment (number of housing units per hectare) and mixed land uses (neighborhoods that incorporate housing, as well as shops and offices, as opposed to single use suburban-style subdivisions) can influence the risk of obesity and being overweight, a health outcome specifically linked to the lack of physical inactivity. A study on sprawl and obesity in the United States showed that people living in auto-oriented suburban areas have a greater risk of being obese than people living in denser urban centers, even after controlling for social and demographic variations; and that there is an association between sprawl and obesity.<sup>23</sup> Though the author cautioned that many factors contribute to obesity, the model provided predicted that if the city of Atlanta, Ga. had the same level of mixed use, mass transport provision and pedestrian amenities as Boston, Mass., the risk of obesity for its inhabitants would be reduced by 17 percent. Another study found that New York City residents tend to walk more and have a lower Body Mass Index in areas with higher population density and more bus stops and rail stations.<sup>24</sup> Likewise, cities with more bicycle facilities have been shown to have more bicyclists, while cities and countries that have built facilities for walking have higher rates of this activity.<sup>25</sup>

In addition, other barriers or facilitators may exist in different settings. Social norms may mean that bicycling

or walking for transport are stigmatized as “for poor people” and the social status of owning and using an automobile favoured. In other countries, bicycling is instead held in relatively higher esteem and more accepted, or even viewed as fashionable.

Air quality can prevent, or even negatively harm the health of those bicycling and walking in a city. Images from places such as Beijing or Delhi show an urban environment where the elderly or others may be at risk when exposed to such poor air quality. Governments may even recommend individuals to “stay inside” when air quality is particularly poor.

Safety and security can prevent people from venturing out or influence them to use what they perceive as a safer ways to get around, such as private vehicles. Poor traffic safety conditions, or even the perception of this, can prevent residents from walking or cycling. Crime – the fear of being robbed on city streets at night or of violent crime on public transit or in public spaces can also prevent people from walking and bicycling.

Lastly, public policies may favor auto-oriented, more sedentary development and consumer behavior or discourage active transport. This may include government restrictions on housing loans that place new development on inexpensive land on the urban periphery, land use and zoning policies that dictate less safely walkable communities, taxes or tax breaks for private vehicles, and other incentives or disincentives.

### **What is the current state of active transport in low and middle-income countries?**

There is growing concern about decreasing physical activity in low- and middle-income countries. Obesity, an outcome of physical inactivity, is on the rise worldwide.<sup>26</sup> Residents of several countries such as Argentina, South Africa, and Turkey have average body mass indexes very near to those living in the United States, with Mexico actually surpassing the United States in this category in 2013. A rising middle, combined with increasing motorization are leading to reduced levels of physical activity in China, India and Brazil.<sup>27</sup>

A study in China showed that as people purchased vehicles they became more obese over time, mostly seen among men.<sup>28</sup> The study revealed that compared to those whose vehicle ownership did not change, men who



acquired a vehicle experienced a 1.8-kg greater weight gain and had 2 to 1 odds of becoming obese. And in Colombia, a separate project found that men had increased rates of obesity with the acquisition of a motor vehicle.<sup>29</sup>

Across the developing world, especially in places such as Brazil, India, Mexico and China, people are buying private cars or motorcycles at a fervent pace. In Latin America, private motor vehicle ownership is increasing at rapid rates, with countries such as Brazil, Peru, Colombia and Argentina seeing car sales double and triple in recent years.<sup>30</sup>

A review of physical activity in 34 countries showed that the prevalence of not engaging in active transport varied greatly across countries.<sup>31</sup> Despite this, one key theme is that many low and middle income countries have historically had high rates of walking, biking or mass transit, with different regions comprising different types of active transport. A brief overview from some global regions is described below.

### Africa

One fairly recent study shows the high rates of walking in most African cities, with some also showing significant shares of bicycling among residents. That said, recent trends in Africa show growing use of motorcycles and moto-taxis.

City	Country	Mobility (trips/person/day)	Mode Choice, % of Total Trips			
			Walk	Bicycle	Public Transport*	Private Motor- ized Transport**
Morogoro	Tanzania	1.7	67	23	12	4
Dar es Salaam	Tanzania	1.9	47	3	43	7
Nairobi	Kenya	2.2	47	1	42	7
Eldoret	Kenya	2.7	48	12	24	16
Kinshasa	Congo	2.2	70		20	10
Addis Ababa	Ethiopia	4.9	70		26	4
Bamako	Mali	3.1	60	2	17	21
Ouagadougou	Burkina Faso	3.8	42	10	3	45
Harare	Zimbabwe	N/A	63	1	16	20
Niamey	Niger	N/A	60	2	9	32
Dakar	Senegal	3.2	81	1	17	1

\* includes privately operated minibuses and buses. \*\*includes motorcycles, taxis and employer buses.

**Table 2. Mode shares in selected African cities. Source: Pendakur, V. S. (2005) Non Motorized Transport in African Cities: Lessons from Experience in Kenya and Tanzania. World Bank Sub-Saharan Africa Transport Policy Program Working Paper. No.80.**

### Asia

Studies from Asia have noted that inattention to walking and bicycling is leading to declining physical activity from transport.<sup>32</sup> A recent study from the Asian Development Bank provided a table of changing trends from selected cities, indicating that there is a drastic shift from walking and bicycling to mostly motorcycles and private cars.

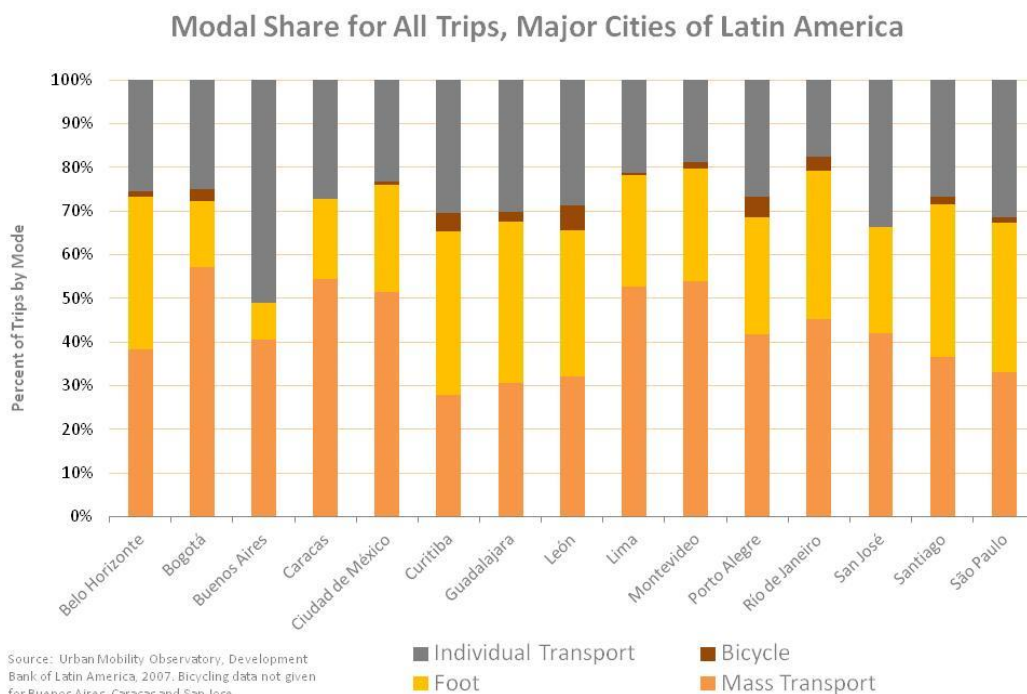
City	Year	Before (%)	Year	After (%)	Mode with Greatest Gain (Motorized)
Bangalore	1984	44.00	2007	8.33	Two-wheeler and car
Changzhou	1986	38.24	2006	21.54	Two-wheeler and car
Chennai	2002	47.00	2008	22.00	Two-wheeler
Delhi	2002	39.00	2008	21.00	Two-wheeler and car
Nanchang	2001	44.99	2005	39.11	Car
Shanghai	1986	38.00	2004	10.40	Two-wheeler and bus
Xi'an	2002	22.94	2006	15.78	Bus

**Table 3. Walking mode share in select Asian cities. Source: Leather, J., Fabian, H., Gota, S., & Mejia, A. (2011) Walkability and Pedestrian Facilities in Asian Cities: State and Issues. Asian Development Bank Sustainable Development Working Paper Series. No.17.**



## Latin America

In Latin American countries, in most cities, walking alone comprises around 30 percent of all trips (see Figure 3). In addition, mass transit use is very high, lending to mean that many people are obtaining physical activity daily through walking to and from buses, rail, metro and BRT.



**Figure 2. Modal share for all trips, major cities of Latin America. Source: Urban Mobility Observatory, Development Bank of Latin America, 2007. Bicycling data not given for Buenos Aires, Caracas and San Jose.**

## APPENDIX C: PARTICIPANTS AND BIOS

### Dr. Anvita Arora

*Managing Director and CEO :: Innovative Transport Solutions (iTrans)*

Dr. Anvita Arora, is an Architect and Transport Planner and completed her PhD thesis on Socio-Economic Impact Assessment (SEIA) methodology for Urban Transport Projects: Impact of Delhi Metro on the Urban Poor, from the Civil Engineering Department of the Indian Institute of Technology, Delhi in 2007. She is the Managing Director and CEO of Innovative Transport Solutions (iTrans), an incubatee company of the Indian Institute of Technology (IIT), Delhi since 2008. She was also the India Representative of Interface for Cycling Expertise, I-CE, Netherlands for 4 years. She is the President of the Global Feet and Fiets Foundation, Netherlands and Director

of the Institute for Democracy and Sustainability (IDS), Delhi. She has been teaching Transport Planning in the Urban Design Department in the School of Planning and Architecture (SPA), Delhi for the last 8 years and guides the thesis students of the Transport Planning Department. She was associated with Transportation Research and Injury Prevention Program (TRIPP), IIT, Delhi, a VREF Centre of Excellence, for nearly 12 years and has been involved in projects pertaining to the inclusion of the vulnerable road users and the urban poor in transport planning. She has been involved in sustainable transport projects since 2000, and has focused on understanding the needs of the different user groups in the system. She is a certified trainer in non-motorized inclusive planning and has ongoing projects to integrate Public Transport and NMT systems in large cities.

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## **Mr. Iván De la Lanza**

*Bicycle Mobility Strategy Director :: Environmental Department of Mexico City*

Iván De la Lanza is the Bicycle Mobility Strategy Director for the Environmental Department of the Mexico City Government, he's responsible for the Infrastructure, Equipment and Culture (Open Streets) Bicycle Projects and also for the Public Bike Share System, "ECOBICI". For the last three years he was the Institutional Link for the Public Bicycle System: ECOBICI he works on the management, development and implementation of the system, through the relationship with the company in charge of the operation of ECOBICI (Clear Channel Outdoor Mexico) and other public and private offices, also he's responsible for the recent expansion system with a total of 271 new stations and, 4,000 new bikes. On the last three years, Bicycle Mobility Strategy projects has brought to the City an increase of 34% more bicycle trips.

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## **Dr. Carlos Dora (was unable to attend due to last-minute travel issues)**

*Health Policy Expert :: World Health Organization*

Carlos Dora, MD, PhD, is a health policy expert with WHO leading work on health impacts of sector policies (transport, housing, extractive industry and energy) involving health impact assessment (HIA) and systems to manage health risks and benefits. He manages a unit in WHO that also addresses risks to health such as air pollution, radiation and occupation/workplace. Dr Dora has led WHO's work on "Health in a Green Economy" that includes analyses of health co-benefits from green economy policies, and is leading WHO's work on health indicators for proposed Sustainable development Goals in areas such as access to sustainable energy, transport and agriculture. He is now engaged in bringing out the health co-benefits of global initiatives in sustainable energy, including SE4All, CCA, and CCAC. He previously worked on environmental health epidemiology and policy at the London School of Hygiene and Tropical medicine; in the WHO Regional Office for Europe, and as a senior policy adviser to the WHO Director General, Dr Brundtland. Before that he worked in the organization

of primary care systems in Brazil, where he also practiced clinical medicine. He served in US and Chinese science and policy committees, has been a visiting professor at the Chinese Academy of Transportation Sciences. His MSc and PhD are from the London School of Hygiene and Tropical Medicine, on the topics of ageing and Non-Communicable Diseases in developing countries. His publications cover health impacts of sector and sustainable development policies, Health Impact Assessment and health risk communication.

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## **Luis Fernando Gomez MD MPH**

*Professor, School of Medicine :: Pontificia Universidad Javeriana*

A scholar in the area of urban environments and health. Since 2002, he has participated as PI and Co-PI in several studies aimed at establishing the potential influence of different attributes of urban environments on active transportation, leisure time physical activity, sedentary patterns and health related quality of life. He has also studied the structural drivers linked with the nutrition transition in the Latin American context. He has been consultant in several national health and nutrition surveys in Colombia and Ecuador. He has participated in other research and training projects funded by a broad array of national and international sources, including the Pan American Health Organization, UNICEF, International Development Research Centre, EMBARQ and International Union for Health Promotion and Education. In the last 5 years, he has published with other authors 23 peer reviewed papers in several international journals with impact factor.

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## **Dr. Ellen Hamilton**

*Lead Land and Housing Specialist :: World Bank*

Ellen Hamilton is the Lead Land and Housing Specialist for the Urban and Resilience Management Unit (Urban Anchor) of the World Bank. She has over 15 years experience leading analytical work and projects focusing on land and housing (affordable land/ housing supply and demand; subsidies, tenure, urban growth, post-

disaster housing reconstruction, land/housing and social inclusion (urban upgrading), brownfield reuse and urban planning). Her work on land and housing is complemented by broad experience with other aspects of urban development including regional development, municipal management, urban services, urban poverty, disaster risk reduction, local economic development, cultural heritage and green cities. She is particularly interested in the inter-linkages between land / housing and urban development. Her regional experience includes middle and lower-income countries such as Azerbaijan, Belize, Georgia, Honduras, Hungary, Jamaica, Kyrgyz, Lithuania, Mexico, Pakistan, Panama, Peru, Russia, and Slovakia. She holds a Ph.D. in Geography from Columbia University and wrote her dissertation about housing and residential differentiation in Moscow.

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#### **Dr. Enrique Jacoby**

*Region Advisor on Healthy Eating and Active Living :: Pan American Health Organization*

Enrique Jacoby is a Peruvian M.D. trained at San Marcos University in Lima with a Master's Degree in Public Health Nutrition from Johns Hopkins University. Since the year 2000 he works as Regional Advisor on Healthy Eating and Active Living, in the Pan American Health Organization (the Americas branch of WHO) in Washington, D.C. Some activities related with his present position are: The coordination of the Regional implementation of the WHO Global Strategy on Healthy Diet, Physical Activity and Health; the organization of the Task Force Trans Fat Free Americas; and the development of strategic partnerships with the sustainable urban development community in the Americas.

Enrique is co-founder of the Network of Ciclovias (Car-Free Sundays) of the Americas and promoter of the Active Cities, Healthy Cities Contest that awards cities that are taking steps towards becoming more livable, sustainable and healthy. He was co-Principal Investigator of an international project sponsored by CDC that studied the relationship between the urban physical environment and transportation on the levels of physical activity and health of the people in Bogota City. In the last five years, he has worked in public health policies and programs in Chile, Brazil, Mexico, Ecuador, Argentina, Puerto Rico, Colombia, and Costa Rica.

Previous to his current position in PAHO Enrique worked in public health nutrition in Peru and Ecuador over more than 15 years. He was Principal Investigator in the Nutritional Research Institute in Lima, Peru (1989-1999) and in 1995-97 visiting researcher in the Department of Pediatrics, Medical School of the University of California, Davis. He has published more than 50 peer-reviewed scientific articles.

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#### **Ms. Gail Jennings**

*Sustainable mobility strategist / consultant*

Gail Jennings is a transportation researcher and NMT specialist who places strong emphasis on transportation equity issues and the needs of those who use the transport system. Recent work includes an audit of South Africa's NMT regulatory framework, the audit and design of NMT systems (BRT-integrated) in three South African cities (Rustenburg, Johannesburg and Tshwane), and the development of an overall NMT Policy, Plan and Strategy for Rustenburg. In 2008 she founded and edited MOBILITY magazine, a quarterly journal for transport planners and decision makers, and has published the annual Cape Town Bicycle Map and Winelands Bicycle map since 2011 (a map of Johannesburg is in the making).

With a research background in both behaviour-change communication and public health, she has published and presented nationally and internationally about appropriate transport systems; transport behaviour, social equity and citizen activism. In 2010 she was awarded an Open Society Media Fellowship to study the transport behaviour legacy of the 2010 FIFA World Cup in South Africa.

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#### **Dr. Montserrat Meiro-Lorenzo**

*Senior Public Health Specialist :: World Bank*

GDr. Meiro-Lorenzo is a Senior Public Health Specialist. She is responsible for the dialogue on non-communicable diseases, including tobacco, and tuberculosis at the World Bank's Health Nutrition and Population anchor. Dr. Meiro-

Lorenzo has over 20 years experience in international health and development, 16 of which at the World Bank, in Africa, Latino America and East Asia, ranging from clinical care, to health services management and public policy dialogue. She has designed and managed programs and projects in, among other themes, hospital care, tuberculosis control, health information systems, primary health care, nutrition, HIV/AIDS, results based financing, and public health insurance. Dr. Meiro-Lorenzo holds a medical degree and master degrees both in Public Health, and Public Policy.

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### **Ms. Márcia de Moraes Coutinho**

*General Coordinator of Informal Settlements :: Municipality of Rio de Janeiro, Housing Secretariat*

Márcia de Moraes Coutinho is an architect, graduated at Universidade Federal do Rio de Janeiro and holds a Master Degree in Urban and Regional Planning, COPPE/UFRJ. Her professional experience includes activities both in the public and private sectors. She 14 years experience working with IPLAN (Municipality of Rio de Janeiro Planning Institute), coordinating Slum Cadastre, social development project in Rio de Janeiro's slums, irregular land subdivisions in Rio de Janeiro, in partnership with the State General Attorney.

Ms. Coutinho currently works for the Municipality of Rio de Janeiro, Housing Secretariat, General Coordinator for Informal Settlements, in charge of negotiating and consolidating the transfer of funds (Ministry of Cities, CAIXA and IDB), articulating and integrating Housing Secretariat's departments (urban/architecture projects, construction, social work and land tenure regularization), and designing Terms of Reference for public bids aiming at hiring managerial and social work support. She has also has experience planning and follow-up of disbursements related to construction, social work, land tenure regularization, urban/architecture projects, managerial support and acquisition and/or compensation for buildings and betterments, funded with external resources, as well as designing and follow-up on fundraising projects.

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### **Ms. Amanda Ngabirano**

*Urban and Regional Planner/Lecturer :: Goudappel Africa/ Makerere University, Kampala, Uganda*

Ms Ngabirano is a professional urban and regional planner. She is an assistant lecturer at Makerere University, in Kampala, Uganda. She studied Bachelor of Urban Planning at the same university, and a Master of Science in Urban and Regional Planning and Development in the Netherlands. She has been teaching at Makerere University since 2006 to date. She also worked as news anchor and editor at a national television, Uganda Broadcasting Corporation in Uganda, for a period of six years.

Amanda has a great passion, skill & experience in orderly and planned physical development for sustainability. Her current interest is mainly on sustainable modes of transport, and more so, the active ones.

She is also an excellent communicator, assertive, and self-driven. Amanda has been a speaker at several local and international conferences, mainly related to sustainable transport for cities. The most recent is the Velo-city 2013 in Vienna, Austria, where her audience was estimated at 1300 participants.

Having lived in the Netherlands for only 13 months, she faced the cultural shock of high numbers of cyclists on all streets by all ages and both sexes. The attitude that cycling was a poor person's mode of transport in Uganda, and that women were not expected to ride, was completely replaced with an impeccable and irreversible passion for cycling and its promotion in Uganda. Her health was the best ever, for the whole duration she was in the Netherlands and she attributes this to the fact that she rode her bicycle quite often.

She believes that cycling as an alternative mode of transport is being underestimated as a contributor towards the economic development in African Countries, and that land use planners, academicians and politicians have a major role to play in this. In her capacity as a lecturer and a managing director of Goudappel Africa, a land use and transport consultancy firm, she has succeeded in spear-heading some process issues to change the face of cycling in Uganda. She was a member of the National Non-Motorised transport policy steering

committee, a member of the National Road Safety Policy steering Committee, and a member of the steering group for the Ministry of works and transport in Uganda. She is also the TEST Network (Transport Environment Science & Technology Network) co-ordinator for Uganda.

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### **Dr. Vincent Onywera**

*Director :: Center for International Programmes and Collaboration, Kenyatta University*

Dr. Vincent Onywera has a Bachelor of Education (Honors) in Physical and Health Education from Kenyatta University. His graduate training was from the same University where he obtained his M.Ed (Physical and Health Education). He later completed his PhD (Exercise and Sports Science) where his research focus was on the role of genetics, nutrition and sociocultural factors in explaining the phenomenon performance of Kenyan middle and distance runners. Vincent, the Director, Center for International Programmes and Collaboration at Kenyatta University is also a Senior Lecturer at Kenyatta University, Department of Recreation Management and Exercise Science. He also volunteers his time working at the International Association of Athletics Federations (IAAF) Academy at Kenyatta University. He is currently instrumental in the establishment of a Kenyatta University Sports Complex complete with a stadium and recreation centre. Vincent has published widely and has been involved in a number of national, regional and international academic endeavours aimed at capacity building, surveillance and research for focusing on healthy active living in the greater Eastern Africa and Great Lakes Region (Kenya, Uganda, Tanzania, Ethiopia, Rwanda, Burundi and Southern Sudan) and beyond.

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### **Dr. Michael Pratt**

*Senior Advisor :: Centers for Disease Control and Prevention*

Dr. Michael Pratt is the Senior Advisor for Global Health in the National Center for Chronic Disease Prevention and Health Promotion at the Centers for Disease Control and Prevention (CDC). Previously he was the Chief of the Physical Activity and Health Branch at CDC, led

CDC's World Health Organization Collaborating Center for Physical Activity and Health, and is the founder and director of the CDC International Courses on Physical Activity and Public Health. Dr. Pratt is an Adjunct Professor of Public Health at two U.S. universities (San Diego State, and Emory), and in the schools of medicine and government at the University of los Andes in Colombia. He completed both a Master's Degree in exercise physiology and his M.D. at the University of Washington in Seattle, and medical residency training at the Mayo Clinic in Minnesota and CDC, and earned a Master's Degree in Public Health at the University of Minnesota. He is board certified in General Preventive Medicine and Public Health and is a Fellow in the American College of Preventive Medicine and the American College of Sports Medicine. Dr. Pratt's research interests include increasing global public health capacity for chronic disease prevention, environmental and policy approaches to increasing participation in physical activity, the costs of inactivity and cost effectiveness of physical activity interventions, and physical activity counseling by health professionals. He has published over 100 scientific articles and spoken widely on disease prevention and health promotion.

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### **Mr. Magnus Lincoln Quarshie**

*CEO and Transportation/Traffic Engineer :: Delin Consult Limited*

Ing. Magnus Lincoln Quarshie is a Transportation/ Traffic Engineer with tremendous experience in the Urban Environment having participated in Roads Rehabilitation and Traffic Management Scheme in Accra where he played the roles of Assistant Resident Engineer for two years and Acting Chief Resident Engineer for one year. He has had considerable exposure and participated in making key traffic management decisions for Accra. Since obtaining his master's degree Ing. Quarshie has developed special interest in safety, pedestrianization and the use of non-motorized transport in urban and rural areas. He has been responsible for review existing traffic relates studies / proposals for improving commute in study areas; Develop data formats and requirement of field studies for traffic and transport surveys; Plan, conduct and supervise traffic surveys and household survey; Participate in Public Consultation conducted



for projects to understand the transportation needs of commuters; Prepare schemes for safe and efficient movement of passenger and goods within study areas, in terms of infrastructure and services for pedestrians, public transport and non-motorized transport users; Prepare scheme for identification of parking requirements; Prepare schemes to promote the use of public transport as against the private car.

Ing. Quarshie has been a strong advocacy for cyclists and pedestrians and was instrumental in ensuring that non motorised transport became a policy aim in the Ghana National Transport Policy. He was Team Leader for the preparation of the Kumasi Transport Plans and also the deputy Team Leader for the preparation of the active Transport masterplan for Tema both funded by the World Bank.

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#### **Dr. Rodrigo Reis**

*Professor/Researcher :: Pontifical Catholic University of Parana and Federal University of Parana, Curitiba*

Dr. Reis is a professor and researcher at the Pontifical Catholic University of Parana and at the Federal University of Parana, in Curitiba, Brazil. His research focuses on physical activity and public health, with particular interest in community interventions for promoting physical activity, built environment, active transportation and health, and physical activity surveillance. His policy and research experience includes working as consultant for the Brazilian Ministry of Health in the development and monitoring of the National Plan for Combating Non Communicable Diseases in Brazil, and being involved in international projects, such as Project GUIA (Guide for Community in Latin America), IPEN Network (International Physical Activity and Environment Network) and CDC physical activity courses in Latin America. Dr. Reis is also a founder member and the current vice-president of the Brazilian Society for Physical Activity and Health. He is also part of the Lancet Physical Activity Series Group who has developed a series of studies published last summer at The Lancet.

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#### **Mr. Jeff Risom**

*Partner, Director of Gehl Institute :: Ghel Architects*

As Head of Gehl Institute, Jeff Risom leads the Applied Knowledge Development team at Gehl Architects. Jeff holds an MSc in City Design and Social Science from the London School of Economics and a BS in Architectural Engineering from the University of Colorado, in the US. This educational background and international design experience that combines the arts and sciences, provides Jeff a unique insight into the technical as well as social aspects of urban design. Jeff is currently leading urban design projects in San Francisco, Moscow, and London along with a series of research projects in Copenhagen. An active teacher, Jeff is a guest lecturer and design critic at Harvard Graduate School of Design, the Integrated Design Studio at University of Pennsylvania, the Cities Programme at London School of Economics as well as at the Royal Academy of Fine Art in Copenhagen and the Danish Institute for Study Abroad.

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#### **Mr. Tran Vu Tuan Phan**

*Lecturer/Researcher :: Highway Laboratory, University of Transport and Communication*

Mr. Tran is a lecture at the Highway Laboratory – Faculty of Civil Engineering, University of Transport and Communication (UTC) and has worked here since 2006. He also currently serves as Deputy Director of Project Development Unit, National Center for Technological Progress, Ministry of Science and Technology. Mr. Tran received a B.S. from University of Transport and Communication in 2005, and an M.S. from the University of Tokyo at Tokyo in 2010. From 2010 to 2013 he also worked as a consultant for some projects in Transport Planning and Intelligent Transport System in Vietnam.

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#### **International Development Research Center (IDRC)**

##### **Dr. Robert Geneau**

*Senior Program Specialist :: Non-Communicable Disease Prevention, International Development Research Centre*

An expert in public health and health services, Robert Geneau is a senior member of the Non-Communicable Disease Prevention program – a program focused on supporting policies that reduce tobacco and alcohol consumption, promote healthy eating, and encouraging active living.

Before joining IDRC, Geneau spent several years in Sub-Saharan Africa doing hands-on research on public health and health-care delivery services. In Canada, he conducted research into the impact of recent health system reforms on the delivery of primary health care services, particularly relating to chronic disease management. He has worked on various international projects for the World Health Organization's Collaborating Centre on Chronic Disease where he developed and implemented integrated strategies for health promotion, as well as chronic disease prevention. Geneau's research has been published in several peer-reviewed journals.

Geneau holds a PhD in public health from the Université de Montréal and completed post-doctoral studies at the University of Ottawa.

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#### **Mr. Greg Hallen**

*Program Leader :: Non-Communicable Disease Prevention, International Development Research Centre*

Greg Hallen leads the Non-Communicable Disease Prevention program and has expertise in tobacco control and public health nutrition. The prevention of non-communicable disease risk factors has been a focus throughout his career.

Before joining IDRC, Greg was the Chief Executive Officer of the National Heart Foundation in Australia's Northern Territory. He also spent five years with the World Health Organization in Cambodia, where he contributed to the advancement of tobacco control research and policy in Southeast Asia. Earlier work as a dietitian/nutritionist led to a strong interest in tobacco control when working in a public health unit on cancer prevention.

Greg holds a master's degree in nutrition and dietetics and a science degree, both from the University of Sydney, and a graduate diploma of education from Charles Sturt

University (Australia).

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#### **Ms. Amanda Jones**

*Professional Development Awardee :: Non-Communicable Disease Prevention, International Development Research Centre*

Amanda Jones is a Professional Development Awardee with the Non-Communicable Disease Prevention program. A public health researcher, with a specialization in qualitative research, her work at IDRC focuses on investigating strategies to increase physical activity in Africa through active transportation (walking and cycling). She has also conducted work on understanding the state of and priorities for further research on non-communicable disease prevention in low- and middle-income countries.

Prior to joining NCDP, Amanda was a member of the Global Health Research Initiative's evaluation team. For her masters' thesis research, she worked with Ugandan secondary school students to start a sexual health education program in their schools. The program, Peer Education Kabarole, has since expanded across Kabarole district, Uganda. Amanda's general research interest is on multisectoral government engagement for local and national non-communicable disease prevention strategies.

Amanda has a master's of science in global health from the University of Alberta and a bachelor of science in biomedical science from the University of Guelph.

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#### **Mr. Wardie Leppan**

*Senior Program Specialist :: Non-Communicable Disease Prevention, International Development Research Centre*

Wardie Leppan is a Senior Program Specialist with the Non-Communicable Disease Prevention program. After joining IDRC in 1995, Wardie was based in its regional office in Johannesburg until 2001 when he was transferred to the Ottawa head office. He has worked in a wide range of IDRC's programs but since 2004 has



focused solely on non-communicable disease prevention, initially through IDRC's Research for International Tobacco Control (RITC) program, and now more recently with NCDP.

Earlier in his career, Wardie was involved in building food security in Canada and developing countries as head of a Canadian NGO. He also worked for the Canadian International Development Agency as a gender consultant and spent three years with the International Centre for Ocean Development, working on sustainable ocean resource projects in the Caribbean Basin. In the 1980s, he worked for IDRC in the area of energy policy.

Wardie holds postgraduate degrees in both engineering (traffic engineering and transportation planning) and development studies from Carleton University.

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## **World Resources Institute (WRI)**

### **Mrs. Claudia Adriazola-Steil**

*Director :: Health and Road Safety Program, EMBARQ/WRI*

Claudia is the Health & Road Safety Program Director. She works on the global strategy for addressing the public health impact that comes from urban transportation and urban development. She focuses in particular on ways to improve traffic safety, air quality, physical activity, and quality of life through sustainable mobility and urban design in cities.

Claudia has held different managerial positions in the Peruvian public sector. She was the Executive Manager of the National Council of Road Safety in the Ministry of Transport. After her studies in Transport Management in Germany, she was appointed as General Director of Land Transportation in the Ministry of Transport in Peru. She has been the Legal Manager of the Headquarters of the Superintendence of Public Registries, an agency of the Ministry of Justice. Prior to returning to graduate school in the United States, Claudia worked as Public/Private Partnership Specialist and Legal Adviser in PROINVERSION, an agency of the Ministry of Economics.

Claudia graduated as a lawyer in her hometown of Arequipa, Peru. She was trained in Germany in Transport

Management and in 2008 graduated with an Executive Master of Public Administration and a Master of Arts in International Relations from the Maxwell School of Public Administration at Syracuse University, New York, in the United States.

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### **Mr. Nicolae Duduta**

*Associate Transport Planner :: Health and Road Safety Program, EMBARQ/WRI*

Nicolae is an Associate Transport Planner in EMBARQ's Washington DC office, working on transport, urban development, and traffic safety projects across the EMBARQ Network. He has worked on planning, design, road safety auditing, and operational simulation for the Metrobus system in Mexico City, Rio de Janeiro's Bus Rapid Transit network, the TransMilenio in Bogota, as well as transit systems in Turkey and India.

Prior to joining EMBARQ, Nicolae worked as a researcher for three years at the UC Berkeley Center for Global Metropolitan Studies (GMS) and the University of California Transportation Center (UCTC). During this time, he developed planning and urban design recommendations for station areas for the California High Speed Rail Authority, and also worked on transport and land use projects in Beijing, Jinan, and Chengdu, China.

Nicolae holds a Master in Transportation Planning and a Master of Architecture from UC Berkeley's College of Environmental Design, and an undergraduate degree in Architecture and Planning from the Ecole Nationale Supérieure in Lyon, France.

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### **Ms. Qingnan Liu**

*Intern :: EMBARQ/WRI*

Qingnan Liu is currently an intern at EMBARQ for the Health & Road Safety program. She is a newly graduate from Harvard Design School with a Master degree in Urban Planning and a concentration on transportation, infrastructure planning and urban design. Qingnan holds a bachelor degree in Civil Engineering at Tsinghua

University in China and worked two years in an Urban Planning and Design Institute. She also used to be a consultant for the World Bank and ADB on sustainable transport. She has particular interests in public transport, non-motorized transport, sustainable urban development and informal settlement in developing countries.

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### **Mrs. Robin King**

*Director :: Urban Development and Accessibility, EMBARQ/WRI*

Robin King is the Director of Urban Development and Accessibility at EMBARQ. In this role, she promotes collaboration across the EMBARQ network and integration of sustainable transportation and urban development using her experience working in policy matters in the Americas and Asia.

Prior to EMBARQ, she worked as Principal Research Scholar at the Center for Study of Science, Technology and Policy (CSTEP), in Bangalore, where she helped lead the Next Generation Infrastructure Laboratory since August 2008. She also is a non-resident Associate at the School of Foreign Service (SFS) at Georgetown University. Previously, she served as Academic Director of the Masters Program in Latin American Studies in SFS at Georgetown, and held posts at the G7 Group, the Organization of American States, the US Department of State, and Mellon Bank.

She holds a PhD in Economics from the University of Texas at Austin, and a BS in Foreign Service from Georgetown University. She spent a year as a Rotary Exchange student in Oruro, Bolivia, and more than a year as a Fulbright Scholar in Mexico.

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### **Mr. Clayton Lane**

*Chief Operating Officer, EMBARQ/WRI*

Clayton Lane, AICP is Chief Operating Officer of EMBARQ, the WRI Center for Sustainable Transport. Mr. Lane also co-leads WRI's global initiative for sustainable cities, leading a five-year effort in China, India, and Brazil focused on energy, water, and transport.

Prior to joining EMBARQ, Mr. Lane co-founded and directed PhillyCarShare, the non-profit organization that provides environmentally friendly "cars by the hour" from hundreds of neighborhood locations in Philadelphia. Under his leadership, PhillyCarShare helped remove about 20,000 cars, reduce driving by 50 million miles, and save about 4 million gallons of gas. The regional initiative also became the largest of its kind in the world, serving over 50,000 local members.

Mr. Lane previously served as Professional Associate and Lead Planner for Parsons Brinckerhoff, a global planning firm where he became a recognized expert in transit planning and federal New Starts projects. Mr. Lane led long-range planning efforts; designed bus rapid transit and rail systems; assessed regional land use impacts; developed capital and operating cost models; projected ridership; and taught "best practices" regarding the same.

Mr. Lane earned his master in city planning and his master of science in transportation from M.I.T., and holds a bachelor degree in civil engineering systems from the University of Pennsylvania.

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### **Mr. Aaron Minnick**

*Project Coordinator II :: Health and Road Safety Program, EMBARQ/WRI*

Aaron is the project coordinator for EMBARQ's Health and Road Safety program, which works to reduce fatalities and increase quality of life through sustainable urban development and transport. He supports the program staff with administrative and operational tasks, as well as directly working on projects. Prior to EMBARQ he worked with the Student Conservation Association as a crew leader and as a research consultant for the Rainforest Alliance.

Aaron has lived most of his life overseas, including Niger, Benin, and Bolivia, and has traveled extensively throughout Central and South America. He holds a Master's degree in environmental sciences and policy at Johns Hopkins University in Washington D.C., and a Bachelor's degree in business administration at The College of New Jersey with a focus on international business and Spanish. Aaron's interests include

photography, sustainable tourism, active transportation and indigenous cultures.

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**Mr. Ben Welle**

*Associate: Health and Road Safety Program, EMBARQ/WRI*

Ben Welle is an urban planner and associate for health and road safety for EMBARQ, where he works to reduce fatalities and increase quality of life through sustainable urban development and transport in low- and middle-income countries around the world. Ben's work includes leading research and evaluation of projects, particularly in the areas of travel behavior, road safety, physical activity, and air quality related to mass transit, bicycling, pedestrians and urban design. Prior to working at EMBARQ, he was an assistant director at The Trust for Public Land in Washington, D.C., where he researched, consulted and wrote on parks, public spaces, transportation and urban development, including co-authoring reports on promoting health through urban park systems, urban redevelopment and economic benefits of urban park systems. His writing has also appeared in journals such as Landscape Architecture and Planning and Urban Land. Ben has a Master's degree in urban and regional planning from the Humphrey School of Public Affairs at the University of Minnesota and a bachelor's degree from Hamline University.

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## APPENDIX D: AGENDA

### Day 1: Monday, June 24, 2013

**8:30am – 9:00am**      **Registration**

*Continental breakfast provided*

**9:00am – 9:40am**      **Welcoming Remarks and Introductions**

**9:40am – 9:55am**      **Setting the Stage**

*This session provides a brief background to active transport, including regional differences and the status of research in LMICs*

Speakers: Amanda Jones (IDRC) & Ben Welle (EMBARQ)

**9:55am – 10:45am**      **Policies and Strategies: Where to Focus and How Research Can Help**

*Following an introduction to the strategies and policies that influence active transport, we will discuss what policy objectives are most essential and how research can advance action on these policies. This session aims to identify how research evidence supports the development and adoption of priority policies.*

Opening remarks: Greg Hallen, IDRC

Guiding questions for group discussion:

1. Is there anything missing?
2. Policies and strategies could be compared by considering which ones:
  - are most effective?
  - have a greater impact?
  - are foundational?
  - are most urgent?
  - most strongly promote equity?

In your view, which policies and strategies are most essential? Why?
3. If we want to see progress in these policy/strategy areas, what research evidence is necessary?

**10:45am – 11:00am**      **BREAK**

**11:00am – 12:00pm**      **Funders and Decision-Makers: What is the Place of Research?**

*In this session, three speakers will share remarks on what influences the inclusion of non-motorised transport in projects and the wider development agenda. Group discussion will build upon this and focus on what research evidence is relevant to funders and decision-makers.*

Speakers:

Steven Lewis-Workman, Asian Development Bank

Ivan De la Lanza, Bicycling Mobility Strategy Director, Department of Environment, Mexico City

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Ellen Hamilton, World Bank

Guiding questions for group discussion:

1. What has influenced active transport as a priority within your organization?
2. From the experiences of participants within this room, what can be said about what NMT research evidence is relevant and influential to funders and decision-makers?

**12:00pm – 1:00pm**

**LUNCH**

**1:00pm – 2:30pm**

**The Role of Physical Activity Research**

*This session begins with three speakers who will provide illustrations on how research related to physical activity has or has not been used to influence and guide NMT strategies and policies. Through group discussion, this session will then explore and identify how physical activity evidence can more significantly influence NMT action.*

Opening remarks: Luis Fernando Gomez, Fundacion FES Social

Speakers:

Rodrigo Reis, Catholic University of Parana

Montserrat Meiro-Lorenzo, World Bank

Gail Jennings, Sustainable Mobility Strategist

Guiding questions for group discussion:

1. Are we in agreement about there being potential for physical activity research to have a greater role in influencing NMT progress?
2. What are other ways that physical activity research can influence NMT advancements? What research evidence could be influential?
3. What are other ways to get health and other sectors engaging and to increase awareness about physical activity aspects in NMT?
4. How could physical activity be linked to other, more prominent, health issues?

**2:30pm – 2:45pm**

**BREAK**

**2:45pm – 4:45pm**

**World Café: Enhancing the Impact of Active Transport Research**

*The aim of this session is twofold: first, building on the work of previous sessions, we will identify priorities on active transport policies and strategies and influential research evidence; second, we will explore the topics of strategies to enhance the impact of physical activity research. Outputs from this session will inform Day 2 discussions and decisions. The World Café uses a small group format where participants rotate through discussion tables.*

Groups and group leaders:

Priorities for policies and strategies (Robin King, EMBARQ)

Identifying influential research evidence (Ben Welle, EMBARQ)

Improving engagement between health and other sectors (Claudia Adriaola-

Steil, EMBARQ)  
 Barriers to and opportunities for advancing physical activity research evidence  
 (Robert Geneau, IDRC)

**4:45pm – 5:30pm      Day 1 Wrap-Up**

## **Day 2: Tuesday, June 25, 2013**

**8:30am – 9:00am      *Continental breakfast provided***

**9:00am – 10:30am      Research Pathfinding: Establishing Priorities out of New Ideas and Past Experience**

### **RESEARCH TOPICS**

*In this critical session, we will identify and prioritize active transport research topics. The session opens with a brief review of previous discussions and presents additional considerations for guidance. A variety of interactive formats will be used.*

*The results of this session will inform the remainder of the workshop and will constitute a significant part of the workshop's achievements.*

**10:30am – 10:45am      BREAK**

**10:45am – 12:00pm      Research Pathfinding: Establishing Priorities out of New Ideas and Past Experience**

### **RESEARCH TOPICS (cont'd)**

**12:00pm – 1:00pm      LUNCH**

**1:00pm – 2:30pm      Research Pathfinding: Establishing Priorities out of New Ideas and Past Experience**

### **DESIGNS AND APPROACHES**

*In this session we will address the practicalities of conducting research on these priority topics. Appropriate research tools will be linked to specific research topics, methodological needs identified and other research design issues discussed.*

Guiding questions for group discussion:

1. What methods/tools may be of use to address these research topics?
  2. Where do we need to advance methods?
  3. How to we attract researchers to focus on these topics? How do we get researchers interested in this topic talking with others in their own country?
  4. How to we promote engagement of researchers with decision-makers across sectors and disciplines?
  5. Does the capacity necessary to conduct research of this nature currently exist? What strategies should be used to strengthen capacity?
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**2:30pm – 2:45pm      BREAK**

**2:45pm – 4:15pm      Mobilizing Resources**

*Drawing on participants' expertise, this session will establish an accurate picture of the funding landscape for research on active transport in LMICs and identify any coordination needed between funders. We will explore potential opportunities to expand the attention and resources given to this area.*

**4:15pm – 5:00pm      Next Steps**

**5:00pm – 5:30pm      Workshop Wrap-Up**

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