ASIAN TRANSPORT OUTLOOK

USER GUIDE

January 2021.
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I. Introduction

1. The main objectives of the Asian Transport Outlook (ATO) are to strengthen the knowledge base on transport in Asia and the Pacific, to serve as a tracking instrument for the 2030 Agenda, the Paris Agreement, UNCRD 2030 declaration and to support of the planning and delivery of the Asian Development Bank’s (ADB) transport sector assistance to its Developing Member Countries (DMCs). The ambition is to document a comprehensive narrative of the transport sector from 51 ADB regional members plus Iran and Russia and become an indispensable source of statistics for analysis by ADB staff and consultants, National and local policymakers in the Asian region, and academics, as well as researchers working on transport in Asia. The ATO database initially contains transport data but in the future will also contain information on transport policy.

2. The ATO is incremental process. An initial Master List of Transport Data indicators has been developed but there is an explicit possibility to add additional data if this is considered useful. A key feature of the ATO will be a sharable database, which will contain all the data included in the ATO and which will be made available publicly. The population of the sharable database is also an incremental process. It is currently planned that following the initial launch of the ATO, regular updates of the sharable database will be published.

3. The ATO is implemented in phases. The first phase of the ATO runs from November 2020 to early May 2021. The second phase of the ATO is tentatively planned for the period May 2021 – June 2022. The emphasis in phase 1 is on the development of the ATO and initial population with data and policy information at the national level. It is expected that most progress will be achieved in transport data collection and organization. The collection and organization of policy information will be initiated in phase 1 but it is to be expected that much of the policy related information collection will be done in Phase 2.

4. During phase 1 work will also be done on the development of additional components of the ATO database, e.g. a dedicated urban database as well as an overview of unit costs for e.g. transport infrastructure construction or maintenance or the costs of externalities, e.g. congestion, road fatalities or air pollution.

II. Master List Indicators

A. Main Categories at Workbook level

5. Over 400 indicators are initially identified for data collection. With 400+ indicators collated from 51 members, the ATO database will become complex. To streamline the data collection and reporting the following approach has been adopted - all data and indicators are distributed over 9 excel workbooks –

1. Infrastructure (INF) describes in quantitative and qualitative manner (a) physical road, rail, waterways-ports, aviation-airport infrastructure that enables transport, (b) information and communications technology (ICT) Infrastructure, (c) infrastructure to produce different types of fuels used in transport

2. Transport Activity and Services (TAS) describes in quantitative and qualitative manner all forms of transport activity and services through the use of transport infrastructure. This includes description of the vehicles used in transport

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1 This includes all ADB regional members. In addition, Russia and Iran (non regional members of ADB) are included so that the ATO can also function as the tracking instrument for the Regional Environmentally Sustainable Transport (EST) Forum in Asia. Information on India is forthcoming.
3. Access and Connectivity, (ACC) describes access (physical or digital) provided by different forms of transport and the connectivity characteristics of transport systems at different geographical scales.

4. Road Safety, (RSA) describes all information related to the safety of transport and combines: (a) information on traffic accidents (fatalities and injuries) (b) safety features of transport infrastructure, (c) safety features of vehicles used in transport.

5. Air Pollution and health, (APH) describes all information related to transport related ambient air pollution and non-road safety health related and includes (a) Ambient air quality, (b) vehicle related air pollutant emissions, (c) fuel quality characteristics, (d) general health related information, e.g. activity levels.

6. Climate Change, (CLC), describes all information related to transport related climate change and combines: (a) ambient GHG emissions, (b) vehicle related energy consumption and GHG emissions, (c) climate vulnerability and impacts of transport infrastructure.

7. Socio-Economic, (SEC), describes all information on: (a) socio-economic parameters that drive the development of transport, and (b) specific economic impact of transport and its externalities on society at large.

8. Miscellaneous (MIS) this is a rest category for all other indicators.

9. Analysis. A placeholder is reserved for analytical outputs. Analysis could include data and information from different workbooks-categories of information, which is why a separate workbook is reserved for analysis. This can include analysis carried out by the ATO team as well as by third parties who will share results of analytical efforts using ATO data with the ATO team. The role of this Workbook in documenting analytical output will depend on the overall structure and format of analytical work carried out during phase 1 of the ATO. The actual analytical pieces will consist of Word Documents that can be accessed through hyperlinks in the Analysis Workbook.

6. The detailed structure of a dedicated Workbook on urban transport will be decided in a later phase. In addition Phase 1 of the ATO till the end of April 2021 will look at the feasibility of ATO components on Unit Costs in the Transport Sector as well as an overview of external assistance by multi- and bilateral development organizations as well as international NGOs and Foundations.

B. Sub- Categorization

7. Each of the first 8 Categories is sub-divided in sub-categories specific to the Workbook. The ATO team acknowledges that classifying indicators into sub-categories is to a certain extent arbitrary. In some cases it is not be possible to attribute indicators to a specific sub-category, which has resulted in a General (GEN) characterization.

8. The option exists to create additional sub-categories in the future. It is not advised to aggregate or disaggregate indicator sub-categories as this would involve renumbering large numbers of indicators.

<table>
<thead>
<tr>
<th>Workbook 1: Infrastructure (INF)</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sub-categories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban Transport Infrastructure UTI</td>
<td>Information related to quantity and quality of urban transport infrastructure can include multiple modes</td>
<td></td>
</tr>
<tr>
<td>Total Transport Infrastructure TTI</td>
<td>Information related to quantity and quality of transport infrastructure in a given country without differentiating in geographic level can include multiple modes</td>
<td></td>
</tr>
<tr>
<td>Vehicle Manufacture VMF</td>
<td>Information related to production of different types of vehicles</td>
<td></td>
</tr>
<tr>
<td>ICT infrastructure</td>
<td>ICT</td>
<td>Information related to ICT infrastructure at all levels</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>Conventional Fuel Producing Infrastructure</td>
<td>CFP</td>
<td>Information related to production of gasoline and diesel</td>
</tr>
<tr>
<td>Alternative Fuel Production</td>
<td>AFP</td>
<td>Information related to LPG, CNG, Biofuels, Electricity, Hydrogen</td>
</tr>
</tbody>
</table>

**Workbook 2: Transport Activity and Services (TAS)**

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Activity Transit PAT</td>
<td>Describes information on passenger activity within different transit modes at different geographic scales.</td>
<td>Database users can sort based on urban or national level through sorting.</td>
</tr>
<tr>
<td>Passenger Activity Active Transport PAA</td>
<td>Describes information on passenger activity walking and cycling at different geographic scales.</td>
<td></td>
</tr>
<tr>
<td>Passenger Activity Private Vehicles PPV</td>
<td>Describes information on passenger activity through private vehicles at different geographic scales.</td>
<td></td>
</tr>
<tr>
<td>Passenger Activity General PAG</td>
<td>Describes information on general passenger activity at different geographic scales.</td>
<td></td>
</tr>
<tr>
<td>Freight Activity FRA</td>
<td>Describes information on Freight activity within different modes at different geographic scales.</td>
<td>Database users can sort based on urban or national level through sorting.</td>
</tr>
<tr>
<td>Vehicle Park VEP</td>
<td>Describes information on vehicles sold, registered in use.</td>
<td>Safety and Environment characteristics are listed under Road Safety, Air Pollution and Climate Change.</td>
</tr>
<tr>
<td>Shared &amp; Innovative Mobility Services SIM</td>
<td>Describes information related to various types and modes of shared and innovative mobility services.</td>
<td></td>
</tr>
<tr>
<td>Transport Activity and Services General TSG</td>
<td>Rest category</td>
<td></td>
</tr>
</tbody>
</table>

**Workbook 3: Access & Connectivity, (ACC)**

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Access RAC</td>
<td>Information related to Rural Access including gender and equity related info</td>
<td></td>
</tr>
<tr>
<td>Urban Access UAC</td>
<td>Information related to Urban Access including gender and equity related info</td>
<td></td>
</tr>
<tr>
<td>National and Regional Connectivity NRC</td>
<td>Connectivity of national and cross border level transport systems</td>
<td></td>
</tr>
<tr>
<td>Access and Connectivity General ACG</td>
<td>Rest category</td>
<td></td>
</tr>
</tbody>
</table>

**Workbook 4: Road Safety, (RSA)**

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Safety incidents RSI</td>
<td>Information on accidents, fatalities and serious injuries</td>
<td></td>
</tr>
<tr>
<td>Safety Rating Infrastructure SRI</td>
<td>Information on safety rating of different types</td>
<td></td>
</tr>
<tr>
<td>Safety Rating Vehicles SRV</td>
<td>Information on safety characteristics of different types vehicles</td>
<td></td>
</tr>
</tbody>
</table>
### Workbook 5: Air Pollution and health, (APH)

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Air Pollution AAP</td>
<td>Information on ambient air pollution concentrations, exposure and source apportionment</td>
<td></td>
</tr>
<tr>
<td>Vehicle related Air Pollution VAP</td>
<td>Information on air quality related vehicle characteristics. Also total vehicle emissions</td>
<td></td>
</tr>
<tr>
<td>Health Aspects Transport HAT</td>
<td>Includes other health related information – e.g. time spent on active transport</td>
<td></td>
</tr>
<tr>
<td>Air Pollution and health General APG</td>
<td>Rest category</td>
<td></td>
</tr>
</tbody>
</table>

### Workbook 6: Climate Change, (CLC)

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Related Energy and GHG Emissions VRE</td>
<td>Describes vehicle related information and total emissions</td>
<td></td>
</tr>
<tr>
<td>Climate Vulnerability Transport CVT</td>
<td>Climate Vulnerability Transport Infrastructure</td>
<td></td>
</tr>
<tr>
<td>Climate Change General CCG</td>
<td>Rest Category</td>
<td></td>
</tr>
</tbody>
</table>

### Workbook 7: Socio-Economic, (SEC)

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Variables DEV</td>
<td>Information related to population in all its facets including urbanizations</td>
<td></td>
</tr>
<tr>
<td>Household Variables HOV</td>
<td>Information related to household composition, transport related preferences and finances</td>
<td></td>
</tr>
<tr>
<td>Transport investments TIV</td>
<td>Information related to investments in transport infrastructure as well as its maintenance</td>
<td></td>
</tr>
<tr>
<td>Transport Financial Instruments TFI</td>
<td>Information related to transport related taxes, subsidies, incentives. This also includes prices of fuel</td>
<td></td>
</tr>
<tr>
<td>Transport Related Employment TRE</td>
<td>Information on all aspects of transport related employment</td>
<td></td>
</tr>
<tr>
<td>Socio Economic General SEG</td>
<td>Rest category</td>
<td></td>
</tr>
</tbody>
</table>

### Workbook 8: Miscellaneous (MIS)

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Rest Category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COVID COV</td>
<td>Information related to data gathered and restrictions implemented during the COVID-19 pandemic</td>
<td></td>
</tr>
<tr>
<td>SUM4all SUM</td>
<td>SUM4all Sustainable Mobility Rating indicators</td>
<td></td>
</tr>
</tbody>
</table>
C. Policy Indicators

9. The ATO will also contain Policy related indicators. These will be organized by (a) Transport Subsector: rural transport, urban transport, national roads, railways, waterways, air transport, ICT and multimodal logistics) and (b) cross-cutting topics: Air Pollution and Health, Climate Change and Road Safety. The advantage of having both Data and Policy indicators in the same database is that it allows for combining data and policy indicators in the same analysis, e.g. linking road safety targets to fatality rates. The policy related sub-categories have not yet been subdivided in detailed indicators in the release version of the Master List of ATO indicators. This will be done during Phase 1 and will be done in cooperation with the Communities of Interest that are being set up under the ATO.

D. Allocating Indicators to Sub-categories

10. All indicators included in the ATO database are allocated to one specific sub-category. In the same manner that sub-categories have been defined is to some extent arbitrarily in which sub-category an indicator has been classified.

E. Indicator code

11. Each indicator will have a unique code consisting of 3 elements: e.g. SEC- TIV-001, SEC refers to the category, TIC refers to subcategories i.e. TIV refers to Transport investments and last three digits refers to indicator number within that sub-category.

12. For those indicators where we have multiple secondary sources of information, e.g, on road length or rural access the Indicator code will have an extension consisting of a letter. E.g. ACC-RAC-001-a

13. In certain cases it will be decided to scrap an indicator. In these cases the indicator number will become vacant. It is possible to use such a vacant indicator number for a new indicator in the future.

14. It is possible to split up one indicator into sub-indicators. This will be reflected in the Master List and dedicated indicator codes will be assigned for the newly created indicators.

F. Indicator Description and Filters Master List

15. For each of the indicators a short description is given in the Master List of indicators, which will also be repeated on the actual Indicator sheets in the different Workbooks of the Sharable Database. In those cases where an indicator has been collected from a secondary source use will be made of the original source definition.

16. It is anticipated that in the initial phase of the ATO there will be considerable feedback on and discussion around the descriptions given. The ATO team will welcome such feedback and use this to gradually improve the clarity of the indicator descriptions and definitions with the aim to have by the end of Phase 1 a set of descriptions that serves its purpose.
17. For all the indicators included in the Master List a number of characteristics will be defined that can be used for sorting of the ATO indicators at the Workbook level. For now this will be done for status, scope, mode, and sector. In order to allow for sorting only one type of description can be attached to one indicator.

1. **Status**

18. The Status of indicators in the ATO is either complete, partial or pending.

a) Complete - the data collection is complete for the indicator.

b) Partial - the data collection is not yet complete as the data needs to be validated with other sources.

c) Pending - the data has not been collected.

2. **Scope**

19. As part of the “scope” filter the following possibilities have been identified: national, urban, rural, regional (meaning for a group of countries) and NA.

3. **Mode**

20. For “mode” the following possibilities have been included: Road, Rail, Shipping/Waterways/Navigation, Aviation, All Modes, and NA.

4. **Sector**

21. For “sector” the following possibilities have been included: Passenger, Freight, combined, NA.

G. **Indicator Source**

22. For all indicators the source of indicators is identified in the Master List of Indicators. This is broken down in three categories: (a) indicators that have been collected from other sources, (b) indicators will be composed by ATO team on the basis of information collection from country sources, these are described as Country/others and (c) indicators that will be calculated by ATO team on the basis of other ATO indicators, these are listed as Calculated.

III. **Sharable Database**

23. The ATO sharable database is a dynamic database, which means that it will be updated on a regular basis. The database is an open-source database and will be made freely available within and outside the ADB.
A. Overview tab.

24. The Overview tab explains the structure of the ATO Sharable database. It will contain a link to the online version of the ATO Master List and this ATO user guide. The Overview tab will provide links to the individual Workbooks.

B. Workbook tabs.

25. The Workbook tabs follow the structure of the ATO Master List of Indicators and will consist initially of the 8 main categories listed in para 5.

26. Each of the Workbooks will have a table of Content in which the indicators belonging to this respective workbook are organized by sub-category as defined in the Master List. There will be a possibility to sort indicators according to scope, mode and sector (see para 19-21. Those indicators for which data is available will be show a hyperlink, which leads to the actual indicator sheet.

C. Indicator Sheets

1. Descriptive part

27. Each sheet contains a description for the indicator included: indicator name, detailed description, ATO indicator code, unit, , last updated date, source (from secondary sources or computed), website, source code.

28. Each of the Workbook sheets also has a disclaimer explaining the limitations of the data included as well as how users can make use of data in the ATO

This is the Review version of the Asian Transport Outlook Sharable Database. We invite users of the Review version of this ATO database to provide feedback on structure and content of the database via ato@slocatpartnership.org with cc' to angela.enriquez@slocatpartnership.org and chuizenga@cesg.biz. Users of the Review version are requested NOT to share the ATO Sharable Database in any form or shape without permission of the ATO team, which can be reached through the above mentioned email addresses. For more information, methodology and questions, please send an email to ato@slocatpartnership.org

Terms of use for Data: The ATO has been developed following the ADB Terms of Use of data https://data.adb.org/terms-use-data. By using information from the ATO you accept all conditions outlined in the Terms of Use for the ADB data Library.

You are free to share (copy, distribute, and use the ATO database), create (produce works from the ATO database) and adapt (modify, transform, and build upon the ATO database) for both commercial and non-commercial purposes at no cost as long as you acknowledge the copyright of ADB is properly credited and cite the source of the data as follows: “Contains information from Asian Transport Outlook © ADB [year]”

Figure 1: Disclaimer Text ATO (version 16 December, 2020)

3 Original code of the indicator in the source from where it has been extracted. In multiple cases information will be drawn from multiple sources. The ATO follows the principle that each data point included in the database can traced back to its source.
2. Country Data

29. The ATO includes 51 ADB regional members in Asia and the Pacific as well as Iran and Russia. For each entry a standard name and country code is used.

30. The ATO contains in most cases data presented in time series format. i.e. 1990-2020 but in several cases, only specific years are tabulated. This is also influenced by the source if use is made of secondary data.

31. In addition, certain sheets will also contain projections for the future. As a default these will be given for 2030 and/or 2050, but in certain cases projections for other years can be given. Projections are either derived from secondary sources or result from computations by the ATO team.

32. In those cases where data is included from multiple sources the ATO can include multiple sheets for one indicator or multiple data series from different sources will included on one sheet, thereby making possible differences in data visible to the user of the ATO.

3. Sorting data by Country Typology Filters

33. The ATO will ultimately include over 400 indicators and this number can be expected to grow, especially if more detailed policy related information will be included in the database. Users will be able to sort information within a specific indicator on the basis of a range of country typologies:

- Region
- Sub-region
- Income group (based on World Bank classification)
- Annex I or Annex II country status (under the United Nations Framework Convention on Climate Change)
- OECD membership status
- G20 membership status
- ADB membership status
- United Nations Centre for Regional Development Environmentally Sustainable Transport UNCRD EST Forum membership status
- Small Island Development Status
- Landlocked status
- Membership sub-regional cooperation arrangements:
  - Membership Pacific Islands Forum
  - Membership Asia-Pacific Economic Cooperation (APEC)
  - Membership South Asian Association for Regional Cooperation (SAARC)
  - Association of South East Asian Nations (ASEAN)
  - Membership Greater Mekong Sub-region (GMS)
  - Membership BIMP-EAGA
  - Membership Central Asian Regional Economic Cooperation (CAREC)
  - Membership Indonesia – Malaysia – Thailand Growth Triangle
  - Membership South Asian Subregional Economic Cooperation (SASEC)
  - Membership Shanghai Cooperation Organization
- Part of ADB Regional Departments:
  - Central West Asia Department ADB
  - South Asia Department ADB
  - East Asia Department ADB
  - Pacific Department ADB
  - South East Asia Department