ASIAN TRANSPORT OUTLOOK (ATO)

USER GUIDE

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Asian Transport Outlook (ATO) - User Guide

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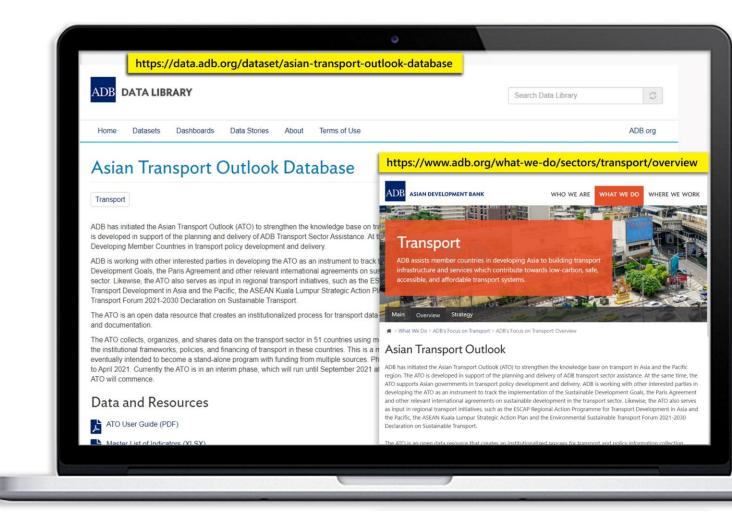
I. INTRODUCTION

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 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 Russia¹ and become an indispensable source of statistics and policy information 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 contains transport data as well as transport policy. In addition to data and policy information at the national level, transport data have also been collected for 462 cities.

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 is the sharable national database and the sharable urban database, which will contain all the data included in the ATO and are available publicly. The population of the sharable database is an incremental process. Following the initial launch of the ATO, regular updates of the sharable database will continue to be published.

3. The ATO is implemented in phases. The first phase of the ATO ran from November 2020 to early May 2021. This was followed by an interim phase from mid-June to mid-October 2021. The second phase of the ATO will run from November 2021 to September 2022. The emphasis in phase 1 was on the development of the ATO and initial population with data and policy information at the national level. In the interim phase the first version of the sharable urban database was delivered while additional data and policy information was added to the sharable national database.

¹ This includes all ADB regional members. In addition, Russia and Iran are included so that the ATO can also function as the tracking instrument for the Regional Environmentally Sustainable Transport (EST) Forum in Asia



II. MASTER LIST INDICATORS

A. SND – SHARABLE NATIONAL DATABASE

a. Main Categories at Workbook level

4. Over 400 indicators are initially identified for data collection in the SND. With 500+ indicators currently collated from 51 members², 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 –

- i. Infrastructure (INF), describes in quantitative and qualitative manner (a)physical road, rail, waterways-ports, aviation-airport infrastructure that enables transport, (b) ICT Infrastructure, (c) infrastructure to produce different types of fuels used in transport)
- ii. 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
- iii. Access & Connectivity, (ACC) describes access (physical or digital) provided by different forms of transport and the connectivity characteristics of transport systems at different geographical scales
- iv. 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
- v. 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.
- vi. Climate Change, (CLC), describes all information related to transport related climate change and combines: (a) ambient GHG emissions, (b) vehicle related energy

² Russia and Iran are included but not ADB regional members

consumption and GHG emissions, (c) climate vulnerability and impacts of transport infrastructure

- vii. 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.
- viii. Policy (POL), provides an overview of transport-related policies, targets, and instruments, institutional frameworks, and financing of transport, covering all categories of the ATO.
- ix. Miscellaneous, (MIS), this is a rest category for all other indicators.

b. Sub- Categorization

5. Each of the first 8 Categories is sub-divided in sub-categories specific to the topic of 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.

6. 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.

Workbook 1: Infra	astructure ((INF)	
Sub-categories		Description	Comments
Urban Infrastructure UTI	Transport	Information related to quantity and quality of urban transport infrastructure can include multiple modes	
Total Transport Inf TTI	rastructure	Information related to quantity and quality of transport infrastructure in a given country without differentiating in geographic level can include multiple modes	

Vehicle Manufacture VMF	Information related to production of different types of vehicles	
ICT infrastructure ICT	Information related to ICT infrastructure at all levels	Information generally not available for rural, urban, national
Conventional Fuel Producing Infrastructure CFP	Information related to production of gasoline and diesel	
Alternative Fuel Production AFP	Information related to LPG, CNG, Biofuels, Electricity, Hydrogen	

Workbook 2: Transport Activity and Services (TAS)			
Sub-categories	Description	Comments	
Passenger Activity Transit PAT		on urban or national level	
Passenger Activity Active Transport PAA	Describes information on passenger activity walking and cycling at different geographic scales.		
Passenger Activity Private Vehicles PPV	Describes information on passenger activity though private vehicles at different geographic scales.		
Passenger Activity General PAG	Describes information on general passenger activity at different geographic scales.		

Freight Activity FRA	Describes information on Freight activity within different modes at different geographic scales	
Vehicle Park VEP	Describes information on vehicles sold, registered in use	Safety and Environment characteristics are listed under Road Safety, Air Pollution and Climate Change
Shared & Innovative Mobility Services SIM	Describes information related to various types and modes of shared and innovative mobility services	
Transport Activity and Services General TSG	Rest category	

Workbook 3: Access & Connectivity, (ACC)			
Sub-categories	Description	Comments	
Rural Access RAC	Information related to Rural Access including gender and equity related info		
Urban Access UAC	Information related to Urban Access including gender and equity related info		
National and Regional Connectivity NRC	Connectivity of national and cross border level transport systems		
Access and Connectivity General ACG	Rest category		

Workbook 4: Road Safety, (RSA)			
Sub-categories	Description	Comments	
Road Safety incidents RSI	Information on accidents, fatalities and serious injuries		
Safety Rating Infrastructure SRI	Information on safety rating of different types		
Safety Rating Vehicles SRV	Information on safety characteristics of different types vehicles		
Road Safety General RSG	Rest categories		

Workbook 5: Air Pollution and health, (APH)			
Sub-categories	Description	Comments	
Ambient Air Pollution AAP	Information on ambient air pollution concentrations, exposure and source apportionment		
Vehicle related Air Pollution VAP	Information on air quality related vehicle characteristics. Also, total vehicle emissions		
Health Aspects Transport HAT	Includes other health related information – e.g., time spent on active transport		
Air Pollution and health General APG	Rest category		

Workbook 6: Climate Change, (CLC)			
Sub-categories	Description	Comments	
Vehicle Related Energy and	Describes vehicle related		
GHG Emissions VRE	information and total emissions		
Climate Vulnerability	Climate Vulnerability		
Transport CVT	Transport Infrastructure		
Climate Change General CCG	Rest Category		

Workbook 7: Socio-Economic	:, (SEC)	
Sub-categories	Description	Comments
Demographic Variables DEV	Information related to population in all its facets including urbanizations	
Household Variables HOV	Information related to household composition, transport related preferences and finances	
Transport investments TIV	Information related to investments in transport infrastructure as well as its maintenance	
Transport Financial Instruments TFI	Information related to transport related taxes, subsidies, incentives. This also includes prices of fuel	
Transport Related Employment TRE	Information on all aspects of transport related employment	

Socio Economic General SEG	Rest category	
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Workbook 8: Miscellaneous (MIS)			
Sub-categories	Description	Comments	
General Rest Category			
COVID COV	Information related to data gathered and restrictions implemented during the COVID-19 pandemic		
SUM4all SUM	SUM4all Sustainable Mobility Rating indicators		

c. Policy Indicators

7. The ATO also contains Policy related indicators. 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. This is currently organized as follows:

Workbook 9: Policy Workbook (POL)		
Sub-categories	Description	Comments
Vision Statements VIS	Vision statements relating to national development or national transport	
Transport Policies POL	Information on available national transport policies and transport subsector policies	
Transport Targets TAR	Information on identified transport-related targets	

Transport Institutions INS	Information related to institutions in the transport	
	sector	
Policy Instruments INT	Information related to various policy instruments for Road	
	Safety, Fuel efficiency, etc.	

d. Allocating Indicators to Sub-categories

8. 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

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

10. 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 number. E.g., ACC-RAC-001 (1)

11. 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.

12. 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.

13. New indicators will be given the next vacant indicator number but will be grouped together with related indicators (i.e. the Master List will not be arranged numerically by indicator code but will follow sub-category groupings)

f. Indicator Description and Filters Master List

14. 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.

15. It is anticipated that in the initial phases of the ATO there will be considerable feedback on and discussion around the descriptions given. The ATO team welcomes such feedback and will use this to gradually improve the clarity of the indicator descriptions and definitions.

16. 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, at the moment, only one type of description can be attached to one indicator.

i. Status

17. 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.

ii. Scope

18. As part of the "scope" filter the following possibilities have been identified: national, national + international, urban, rural, regional (meaning for a group of countries) and NA.

iii. Mode

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

iv. Sector

20. For "sector" the following possibilities have been included: Passenger, Freight, combined, NA.

g. Indicator Source

21. 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 composed by the ATO team on the basis of information collection from country sources, these are described as Country/others and (c) indicators that are calculated by ATO team on the basis of other ATO indicators, these are listed as Calculated.

B. SUD – SHARABLE URBAN DATABASE

a. Main Categories

22. Over 80 indicators are initially identified for data collection. The main categories of the Sharable Urban Database include the following –

- i. Socio-Economic, (SEC), describes information on socio-economic parameters that drive the development of transport.
- ii. Urban Form and Structure + Landuse, (UFS), describes information on the built-up area, block sizes; indicators which are relevant for indicating the transport system efficiency.
- iii. Infrastructure, (INF), details the infrastructure lengths, densities etc.
- iv. Transport Activity and Services, (TAS), describes the modeshares, VKT, congestion and traffic time related indicators
- v. Access and Connectivity, (ACC), give information about the access to Public Transport, services etc.
- vi. Road Safety, (RSA), give information on the road traffic deaths.
- vii. Air Pollution and Health, (APH), describes information on the pollutant concentrations, emissions, per capita, and transport contributions.
- viii. Climate Change, (CLC), details out information on the GHG emissions, per capita, exposure of population to storm surges and floods.
- ix. Miscellaneous, (MIS), give information on impact of COVID-19 on the mobility, and other transport related indicators.

b. Indicator Code

23. Each indicator has a unique code consisting of 3 elements: e.g. UFS-UDB-001, UFS refers to the category, UDB refers to the 'Urban Sharable Database' and last three digits refers to indicator number within that category.

c. Indicator Description and Filter Master List

24. 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 of the Sharable Database.

25. It is anticipated that in the initial phase of work on the SUD there will be considerable feedback on and discussion around the descriptions given. The ATO team welcomes such feedback and will use this to gradually improve the clarity of the indicator descriptions and definitions with the aim to have by the end of Phase 2 a set of descriptions that serves its purpose.

26. For all the SUD related indicators included in the Master List a number of characteristics will be defined that can be used for sorting of the ATO indicators. For now, this will be done for status, and mode.

i. Status

27. 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.

ii. Mode

28. For "mode" the following possibilities have been included: Road, Rail and NA

d. Indicator Source

29. 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 are composed by ATO team on the basis of information collection from country/ subnational sources, these are described as Country/others and (c) indicators calculated by ATO team on the basis of other ATO indicators, these are listed as Calculated.

III. SHARABLE DATABASES

30. The ATO sharable database is a dynamic database (National and Urban), which means that it will be updated on a regular basis. The database is an open-source database and is freely available within and outside the ADB.

A. SND – SHARABLE NATIONAL DATABASE

a. Overview tab

31. The Overview tab explains the structure of the ATO Sharable database. It contains a link to the online version of the ATO Master List and this ATO user guide. The Overview tab provides links to the individual Workbooks.

b. Workbook tabs

32. The Workbook tabs follow the structure of the ATO Master List of Indicators and will consist initially of the 9 (including the Policy Workbook) main categories.

33. Each of the Workbooks has a Table of Content (TOC) in which the indicators belonging to this respective workbook are organized by sub-category as defined in the Master List. There is a possibility to sort indicators according to scope, mode and sector. Those indicators for which data is available are shown a hyperlink has been added, which leads to the actual indicator sheet.

c. Indicator Sheets

i. Descriptive part

34. Each sheet contains a description for the indicator included: indicator name, detailed description, ATO indicator code, unit, source (from secondary sources or computed), website, source³ code.

35. 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 **asiantransportoutlook@gmail.com with cc' to chuizenga@cesg.biz and sudhirgota@gmail.com**

Please find the complete list of the ATO indicators here.

The ATO Indicator User Guide is available here.

For more information, and questions, please send an email to **asiantransportoutlook@gmail.com with cc' to chuizenga@cesg.biz and sudhirgota@gmail.com**

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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: "<u>Contains</u> information from Asian Transport Outlook © ADB [year]"

Disclaimer Text ATO (version 20 September 2021)

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.

ii. Country Data

36. The ATO includes 49 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.

37. 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.

38. 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.

39. 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.

iii. Sorting data by Country Typology Filters

40. The ATO initially already includes over 400 indicators and this number is 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 (UNFCCC)
- OECD membership status
- G20 membership status
- ADB membership status
- Regional Environmentally Sustainable Transport 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)
- o 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

B. SUD – SHARABLE URBAN DATABASE

a. SUD tab

41. The Database has a Table of Content (TOC) in which the indicators are organized as defined in the Master List. There will be a possibility to sort indicators according to mode. Those indicators for which data is available will show a hyperlink, which leads to the actual indicator sheet.

b. Indicator Sheets

i. Descriptive part

42. Each sheet contains a description for the indicator included: indicator name, ATO Indicator code, detailed description, year, unit, Indicator source code⁴, source (from secondary sources or computed), website.

43. Each Indicator sheets compiles data for multiple years and multiple sources. The header rows reflect the details for the data in the respective column.

44. The Database also has a disclaimer explaining the limitations of the data included as well as how users can make use of data in the ATO

⁴ 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.

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You are free to share (copy, distribute, and use the ATO Urban 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 ADB is properly credited and cite the source of the data as follows: "<u>Contains information from</u> <u>Asian Transport Outlook © ADB [year]</u>"

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ii. Urban Centre Data

45. The ATO includes 460 Urban Centres (ADB regional members in Asia and the Pacific + Iran and Russia, and International). For each entry a standard name and UC code is used.

46. The ATO contains in most cases data presented only for a specific year, but in several cases, time series format is also used.

iii. Sorting data by Country Typology Filters

47. The ATO initially already includes over 80 indicators and this number is expected to grow. 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 (UNFCCC)
- OECD membership status
- G20 membership status
- ADB membership status

- Regional Environmentally Sustainable Transport 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

IV. ANNOTATED REPOSITORY OF POLICY DOCUMENTS

49. The policy documents collected in support of work on the policy component of the ATO (about 500) are organized in the Annotated Repository of Transport Policy Documents. This overview is also being updated on a periodic basis. Annotations include:

- Development scope is it national level with transport being part of national development strategy, or is it transport specific.
- Transport sub-sector is it general transport, or does it cover a specific sub-sector: road, rail, inland water, aviation, freight and logistics, e-mobility or ICT.
- Externalities does it have information on road safety, air pollution or climate change.
- Language what language is the document written in.
- Source is the document a nationally published document or is from a secondary source.
- URL where can the document be found online.
- Identified in some cases a policy document has been identified and referenced but the ATO team has not been able to identify and collect the actual document.

V. MASTER SLIDE DECK

50. These are the 8 PowerPoint presentations with multiple analysis charts. These are categorized according to the SND workbook categories. These can serve as rapid aids to conduct the research for the transport sector in Asia-Pacific region.

51. The charts utilise the ATO data and this is mentioned in the source/s. While using these charts, the citations should mention the relevant ATO Indicators – as indicated in individual slides. For further analysis, the SND and SUD can be utilised as required.