Participatory workshop to define a road map for an integrated transport system for Kochi

26 and 27 of March, 2014
Workshop Report
A two-day workshop on the Unified Metropolitan Transport Authority (UMTA) took place in the Kochi Metro Rail Ltd (KMRL) buildings on March 26th and 27th in partnership with Agence Française de Développement (AFD), the funding agency of the Kochi Metro Rail project. The program was conducted by CODATU, a non-governmental organization, in order to lead the discussions and bring participation during the project setup. A group of different stakeholders actively participated in the discussions such as Kochi Corporation, Greater Cochin Development Agency (GCDA), Municipalities and Panchayats included in the area of possible jurisdiction of the future UMTA, Kerala State Road Transport Company (KSRTC), Indian Railways, State Water Transport Department, Vytila Mobility Hub, and other key organizations involved in Urban Transit Development.

The objective of this participatory workshop was to establish with technical and policy makers a road-map specifying the priority actions for the future transport authority and the essential steps for the formulation and implementation of a multi-modal urban transport policy. The main challenges of the future institution have also been discussed during the participatory sessions. Many other subjects were discussed such as coordination of the different transport services, connections between different networks, perimeters of integration, functions, funding of the UMTA, fare system, ownership, legal form, land use planning...

The workshop was thus intense and rich in ideas and concepts sharing between all participants. CODATU experts shared their knowledge and experiences, and provided Kochi with international case studies, through which they emphasized on the key factors to make a multi-modal urban transport policy a success.

The findings, interpretations and conclusions expressed in this reports are those of the authors only and do not necessarily reflect the views of the French Development Agency and the Kochi Metro Rail Limited.
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A particular situation requiring a complete reorganization

Kochi plans to extend its mass transit infrastructure in an integrated way. Different transport modes already coexist in Kochi: private and public bus services, railway lines, industrial port and international airport connections, inland water transport system. A metro rail system is about to be added to these mobility options.

As KMRL is in the process of implementing the future metro rail system, it is an opportunity for Kochi to prepare a mobility plan that will integrate all modes of transportation. This transit oriented development plan gives Kochi the possibility to improve and modernize its mass transit services and infrastructures through the raise of road capacity, development of parking infrastructures, development of pedestrian facilities, modernization of bus services (new lanes and stations, new ticketing system), development of inland water routes ...

However, a study presented by Mr. Shri Tomy Cyriac, RRTS chief consultant, pointed out some constraints for the future transport infrastructures development and especially the facts that the streets are sometimes narrow, with the commercial activity adjoining the streets and the lack of pedestrian facilities. The development of the transport systems has then to consider these constraints associated to the road width and form and to the density of population.

Thus, the city’s wish to provide its population with an integrated transport system has to be though along a land use planning integration. This ambition naturally puts many different stakeholders around the table and a full reorganization is needed in order to reach these goals and the city ambitions. This is why a Unified Metropolitan Transport Authority (UMTA) is arising in Kochi. The establishment of the UMTA for Kochi is a challenge, as Mr. Elias George, KMRL Managing Director, stated at the workshop’s opening. But it is necessary that all stakeholders participate in UMTA design.

This new institution will reorganize and think the entire transport system in an integrated way, i.e. operating all the diverse transport services as if they were a wide single transit system. Cooperation and coordination between the different services and infrastructures have to be planned in order to avoid duplication and competition, and make the transit system efficient and comfortable.

Those many objectives and challenges that the UMTA should meet were presented at the beginning of the workshop by Mr. Elias George and Mr. Ved Mani Tiwari, KMRL Systems director, and were reminded throughout the different sessions in order to feed the reflections. They thanked AFD and CODATU for sharing their knowledge and experiences, and helping Kochi to reach this challenging vision presented by Mr. Elias George. Mr. Xavier Hoang, AFD project manager for Kochi Metro, underlined the unique aspects of the Kochi metro project, not only technically but also socially which is why KMRL could rely on the AFD and CODATU to support the city for making the concept of inter modal urban transport projects a reality.
List of participants

- Government of Kerala (GoK)
- National Transportation Planning and Research Center
- Kerala State Road Transport Company (KSRT)
- Transport consultants
- DB consultant
- Kochi Municipal Corporation
- Greater Cochin Development Authority (GCDA)
- Regional Transport Organization
- Railway Company
- Public Policy Research Center
- Municipalities
- Water Transport Company
- Mobility Hub Operation Entity
- Kochi Metro Rail Limited (KMRL)
- Agence Française du Développement (AFD)
- Cooperation for Development and Enhancement of Urban Transport (CODATU)
1. International experiences about metropolitan authorities

CODATU is a French non-governmental organization initiated in 1980. It aims to foster a better cooperation for urban mobility in the developing world. CODATU’s goal is to promote discussions and exchanges on scientific, technical, economic and social issues concerning urban and peri-urban mobility systems. It is based on experience sharing between the developing countries and old industrialized countries. The association involves various members and experts to facilitate knowledge transfers in order to enhance urban mobility and transport systems worldwide.

The experience of CODATU and its partners were therefore relevant to facilitate the workshop and provide case studies and examples of different types of transport regulations and transport authorities that are being developed in the world.

International experiences on metropolitan transport authorities showed that an UMTA depends on the territory that is involved in. This defines the different stakeholders that will be involved in the project, the partners, and thus the functions, responsibilities, financial resources, legal form and organization of the future authority.

Depending on the organizational form chosen by the institutional authority and according to its desired level of integration, functions and responsibilities can vary significantly:

**Table 1: Functions performed by different lead Agencies**

<table>
<thead>
<tr>
<th>City</th>
<th>Lead Agency</th>
<th>Strategic Planning</th>
<th>Transport Policy Planning</th>
<th>Fare Setting</th>
<th>Infrastructure Planning</th>
<th>Service Planning</th>
<th>Driver Licensing / Vehicle Registration</th>
<th>Traffic Management and Enforcement</th>
<th>Infrastructure Construction and Maintenance</th>
<th>Common Facilities (terminals, bus stops, depots)</th>
<th>Public Transport Operations</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagos</td>
<td>LAMATA</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Lagos metropolitan area</td>
</tr>
<tr>
<td>London</td>
<td>TfL</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Greater London</td>
</tr>
<tr>
<td>Paris</td>
<td>STIF</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>1,286 municipalities</td>
</tr>
<tr>
<td>Singapore</td>
<td>ISA</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>All city-state</td>
</tr>
<tr>
<td>Vancouver</td>
<td>TransLink</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Greater Vancouver region</td>
</tr>
</tbody>
</table>

✓ Means this function is performed by the lead institution, and
✗ Means it is not performed by the lead institution.

During the workshop, CODATU led the participants to question the form and functions that UMTA for Kochi should take.
2. What UMTA is about?

A Unified Metropolitan Transport Authority should tackle three main challenges.

**Challenge n° 1: How to design, build and operate a great and modern public transport network? How to implement an extended and integrated public transport network, reliable, comfortable and attractive?**

It seems that in the case of Kochi every single word has its own and very particular importance:

- **An extended** network: the Kochi metropolis has to deal with an already important urban sprawl, with rural-middle-class activities who have decided to settle along the North-East corridor or southward. It will be very important to select the relevant area to ensure the success of UMTA: not too narrow to be sure to include daily commuters but not too wide to allow a reasonable administrative management;

- **An integrated** network: of course, it will be necessary to coordinate an efficient urban bus network with the future metro lines. But at the same time, UMTA will have to focus on the renewal and modernization of the inland waterways which can definitely play an important role in the organization of mobility in Kochi. The coordination with the Indian Railways, the interurban coaches and the very numerous auto-rickshaws should not be forgotten;

- **A reliable** network: as in many Indian cities, the lack of centralized traffic management can hinder the reliability of the bus network. Although congestion has not yet reached some unbearable levels, it will be necessary to focus on some easy-to-implement solutions allowing a high commercial speed and the minimization of headways irregularities;

- **A comfortable** network: the silent electrically-powered high capacity Kochi Metro lines will be very comfortable for all passengers. It might be a suitable idea to enhance the level of comfort for a reduced number of bus lines, at least in terms of capacity;

- **An attractive** network: the expected Metro attraction should be extended to the other Public Transport modes. From this point of view, an effective fare integration with boats/buses and common basic marketing documents (a common brand or common maps for instance) might be very useful tools.

**Challenge n°2: How the evolution of the mobility system is going to change the city and make it more livable?**

The implementation of a Transit Oriented Development strategy is necessary to not only ensure a sound urban planning that maximize the use of Public Transport and but also generate out-of-the farebox revenues to fund future Public Transport investments. But the fact is that the implementation of a new mobility strategy has drastic impacts on almost all metropolitan strategies: urban planning, urban landscaping, protection of biodiversity corridors in town, public health and safety, economical attractiveness and efficiency and eventually cultural identity. All those aspects are very important in the case of Kochi (a very particular place of nature in the city due to the presence of
the extended backwaters network, an important patrimonial heritage, an important harbor, a potential major touristic destination and a complex cultural identity). *Change mobility and you will change the city.*

**Challenge n°3: How to minimize costs?**

An elegant and smart network design should minimize the initial investments and future operation and maintenance costs and maximize at the same time the future fare-box revenues. **But beyond financial costs, UMTA should also focus on social costs** to ensure the implementation of an overall inclusive design (low-income citizens, discriminated citizens) and **energetic and environmental costs** as well (how to reduce energy consumption and greenhouse gas emissions).

### 3. Main characteristics of UMTA

Mobility is a human need. People need means of transport to fulfill their social, educational, economic and cultural needs. This is why an efficient transport system is important in every agglomeration. Setting up a UMTA in Kochi will help to develop and improve the transport system and thus mobility options. Kochi transport plan is to integrate all the different modes of transportation (except railways): metro, city buses, cabs, rickshaws, ferry boats, and even pedestrian and cycling ways. It is a transit oriented development plan that includes all the public transports modes and some private modes. Thus, many stakeholders have to be part of this new institution such as Cochin Corporation, the Government of Kerala, GCDA, KSRTC, etc.

The first task UMTA has to answer is to **define the boundaries** within which the authority will be effective. Then it should adopt a **clearly-defined legal form and financial organization**. The different goals and **roles of the authority** have also to be defined like the **priority actions** on a short and long term vision.

**Jurisdiction**

The perimeter of the future jurisdiction UMTA has to be clearly defined. This is one of the first steps in the authority implementation. It is more likely to have a perimeter that will allow a maximum of connections between the dwellings and the facilities. The territorial area of UMTA Kochi might extend to the whole Kochi Metropolitan Area which would give a clear geographic definition. But it might also be a tailored made in between the Kochi Urban Agglomeration Area and the Metropolitan Area. It seems important to see how the dynamics of urbanization inside or outside the institutional perimeter could affect the transport policy in this area.
Legal form

Transport authorities may be a specialized public authority, a department of an existing authority, an organization formed of several local authorities or a company established by the authorities. It is recommended that those in charge of the Transport Authority have direct access to the elected representatives in charge of regional policy in order to ensure a central place to transport policy. The main issue is actually about the authority’s budget, its financial autonomy and its interaction with the state of Kerala.

Roles of the authority

Mr. Ved Mani Tiwari, KMRL Director System, gave an exhaustive list of goals the UMTA Kochi should fulfill. His list is presented below:

- To prepare a Comprehensive Mobility Plan (CMP) and a transport master plan
- To formulate policies and programs for improvement of public transport
- To formulate for the planned development of integrated facilities
- To approve traffic and transportations projects
- To develop measures and publish performance indicators for public transport services
- To administer the Urban Transport Fund
- To promote technology based solutions for traffic management
- To recommend the principles for determination of fare
- To introduce smart card based seamless integrated ticketing systems
- To formulate policies for development of mobility solutions for the physically challenged, elderly, women and children.

All those goals the future UMTA for Kochi should reach were discussed during the workshop. Each participant was invited to share its point of view of the main challenges UMTA Kochi should meet.

4. The main challenges for UMTA Kochi identified by the participants

During the discussion about the main challenges for UMTA Kochi, the terms of ‘coordination’ and ‘cooperation’ appeared several times. The participants all agreed to say that UMTA has to be a regulatory body which has to avoid competition between the different transit systems and functions overlapping. This can be done by reorganizing the entire transport network. It is indeed one of the main challenges for the future authority. Moreover, different kinds of cooperation have to structure, including the different modes of transport from the public and private sector (bus operator for instance).
The other main challenge UMTA Kochi will have to face is to instrument an adequate financial system according to conclusions from the discussion.

**Figure 1: The main challenges for UMTA Kochi (word cloud)**

5. The current and possible future organizations of transport & mobility management and urban development in Kochi

Comparing the current and possible future organizations of transport & mobility management to urban development in Kochi, it should be outlined that:

- To begin with, the future UMTA of Kochi should ideally focus on the strategic level which encompasses the formulation of a multi-modal planning approach, the revision of the Comprehensive Mobility Plan in accordance with the current Master Plan and the filling of certain gaps like the formulation of a parking policy;
- On the tactical level, dedicated Special Purpose Vehicles (SPV) may be created to take care of the detailed design and implementation of projects. The future UMTA of Kochi and those SPV should be in a contractual performance relationship. But the UMTA might also be responsible for the design and implementation of some Intelligent Transport System (ITS) projects (Centralized Control Centre for Public Transport, Smart ticketing and fare integration, Centralized Control Centre for Traffic Management);
- The future UMTA of Kochi should be the only interlocutor of the urban transport sector to some powerful entities (GOK, Indian Railways, GCDA);
• The development of the future UMTA should be a step by step progressive process.

Regarding the proposed time-line, the second day workshop spotted out that:

• The team-building effort started within this workshop should be extended to other stakeholders without losing time. It might be wise to keep on exchanging facts, data and idea to produce a shared vision of the main mobility issues in Kochi;
• The juridical and financial issues should be tackled as soon as possible especially regarding the implementation of a future Urban Transport Fund. The contractual relationship between UMTA and KMRL should be studied at the same time;
• The revision of the Comprehensive Mobility Plan (CMP) should be launched soon to produce a long-term vision. This new CMP should also define a first organization of the future Public Transport Network especially regarding the suppression of overlapping bus corridors;
• The definition of a possible reduced pilot integrated network (encompassing for instance a few feeder bus lines) and some modernized waterways lines should be studied as soon as possible in order to be in place with the first metro line;
• This pilot integrated network should rely on the implementation of interchanges points, on a common ticketing system and on a common marketing effort (maps, communication).

*Figure 2: The current matrix of functions*
Figure 3: New matrix of functions including UMTA

Discussion on the future possible organizations of UMTA, UMTA Kochi workshop, March 26th – 27th, 2014
6. What are the most difficult and the easiest things to do...?

A last discussion raised a list of priority actions that have to be accomplished by the UMTA. The participants were invited to point out one action that could be qualified as easy to implement, and one action more difficult to set up. When all the ideas were sorted by topics the entire group worked on structuring a timeline that will define which actions have to be launch in priority and which ones can be set on a longer time scale.

Discussion on the priority actions for UMTA, UMTA Kochi workshop, March 26th – 27th, 2014
Several strategic and organizational actions have to be done by the time the metro will be opened. One of the first steps to launch is the revision of the Comprehensive Mobility Plan (CMP). The participation of the different stakeholders is needed in order to converge towards a single vision about the future transport planning strategy of Kochi.

Data collection is also an important process that has to start quickly. This strategic step will allow the future Transport Authority to have a realistic vision of the situation in Kochi. It is actually very useful to implement future steps that will take place later, like traffic management, and bus re-routing.

Moreover, a sound legal framework has to be established during the strategic phase in order to organize the future UMTA.

On the tactical level, it is the whole network design that should be established before the metro runs. This could among other things help to avoid overlapping bus lines problems, on a same itinerary. This first phase, before the metro opening, is also the opportunity for the new Transport Authority to get new buses that will supply its fleet of vehicles.

On the D-Day, i.e. when the metro opens, a pilot integrated public transport network of limited scale should be in place, connecting all the different public transport modes such as buses, boats, and metro of course. The system will later have the ability to design and include pedestrian...
and bicycles ways in the loop, and make the network even more integrated. This action is necessarily to be included in the CMP revision very early because it is a tough issue that needs to be planned on a long term vision. It implies to rethink public spaces for pedestrian and bikes paths which will indeed impact the image of the city.

The development a parking policy would be very helpful by this time so that users can leave their private vehicle next to a public transport station and thus ride the public transport network without wondering where they will park their car (or motorcycle) once they reach the city core center for instance. Its implementation would also enable the Kochi citizens to visualize the benefits of developing the concept of the Kochi UMTA.

This parking policy can be then completed by a feeder bus network service that takes care of passengers from residential areas, but also from parking facilities, the airport to a metro. New waterways lines should also be implemented in the network when the metro opens so that users can already enjoy a seamless public transport network. Those new corridors should continue to spread out along the metro lines and the current transport network in order to supply the city network.

Another action that should take place when the metro runs, is to setup a centralized control system that would allow the future UMTA to implement a unique timetable. This can especially be done by implementing a bus tracking system on the entire vehicle fleet, in coordination with the metro centralized control system. A real time localization of each bus is nowadays feasible with a GPS technology so that the users know when the next bus is coming. Additional information can be sent to the control center, in order to manage at best the network, and the vehicle fleet. Information about the number of passengers at any time can help to get a global vision of the network and support decision. For instance, the centralized control center will be able to see if a particular corridor has to be supplied with more vehicles to meet at best the demand. Average calculation during different time of the day can provide information of the exact peak hours when the network has to be intensified in some corridors. This type of control system has been developed in Ahmedabad, Gujarat and helps to manage the entire Bus Rapid Transit System. Data collection is made on each vehicle in order to know where the bus is, which particular route it serves, or if it is under revision. Information is also collected on each station so that the control center knows exactly where, when and how many passengers gets on the transit system in order to manage the network at best. It is a very helpful system that can be implemented in Kochi in order to manage the entire seamless network and provide a great public service.
7. Synthesis and concluding

Figure 5: How to get from point A to point B?

The access to the final destination point is a real and non-negligible issue for the future UMTA. To get from A to B, a user has to walk on the street at first (walk outside the dwelling, the office, the shops...). Then, he can rely on several public transport options (bus, boat, metro) and also private modes, such as motorcycles, cars, or bikes. Other options to reach the final destination are taking a rickshaw or a minibus.

It is clear that Kochi can offer a lot of mobility options to its citizens and visitors but the transport authority is challenged by the issue of building an efficient seamless network. Integration of all transport modes can be done within three phases, just as discussed during the workshop.
PTN corresponds to the first phase of integration. \textit{iPTN} here is used for ‘\textit{integrated Public Transport Network}’. This first phase, labeled in green on the illustration, relates to the integration of the three main public transport modes: the bus network, the waterways and the metro network. Those three transit modes have to be efficiently connected and complementary. The user should not encounter any difficulty to change between one of these transport modes. Integration should be done through the implementation of a unique timetable and ticketing system (one fare to access the entire network). It should be transparent and comfortable for the user, and the quality standards have to be the same.

The second phase of the integration process is identified on the illustration as \textit{iPTN +} (in orange). This \textit{Network +} integrates private vehicles through the implementation of parking spaces inside bus stations or mobility hub just like it is planned for Vytila Mobility Hub. It is important to notice here that some people have their own private parking spot thus they do not use public services nor the public space in the streets because they do not even walk on sidewalks to reach a specific transport mode. A ticketing system that combines parking entrance and access to the public transport network for a special price could be a good incentive to make those people use public services, and therefore use less their private vehicle (and thus, contributes to less congestion, less energy consumption and a better air quality in the city). Still it is clear that some people will continue to use their private vehicle only and will not move around the city using a public transport mode even if the network system is very efficient...

Another issue that needs to be point out here is the access for disabled people to all those public services starting with the sidewalks. The integrated network should be secured for all the physically challenged, the elderly and the children.

A third phase is displayed in purple on the illustration is called \textit{iPTN ++} or \textit{integrated Public Transport Network ++}. It connects the small mode of transports to the rest of the integrated network system. Rickshaws and minibuses must not be disregarded in the mobility plan because they are useful to reach the very core center of the city where streets are too narrow for big buses, and where the metro does not run. Their integration to the transport network can be done once the rest of the public services are connected to each other and operate together.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline
\textbf{Phases of integration} & \textbf{Walking} & \textbf{Bus network} & \textbf{Metro network} & \textbf{Waterways network} & \textbf{Parking spaces (for private vehicles)} & \textbf{Rickshaws} & \textbf{Minibuses} \\
\hline
\textit{iPTN} & & & & & & \\
\hline
\textit{iPTN +} & & & & & & \\
\hline
\textit{iPTN ++} & & & & & & \\
\hline
\end{tabular}
\caption{Proposition of timeline for integration}
\end{table}
**Proposition of an integrated Action Plan time-line**

Looking back at the first action plan drafted by KMRL, it appears that all participants of the workshop brought some new ideas quite helpful to fine tune a road map for the future UMTA and the necessary actions.

An integrated network will be built only after a preparation phase which would include first a structuring phase, based on open discussions, and followed by a more operational phase, where decisions will be taken. This concerns the definition and adoption of the legal framework, the CMP revision and the adoption of a Master Plan, the creation of the Urban Transport Fund (UTF) and the adoption of an integrated tariff policy that would allow the institutional authority to implement a smart card ticketing system (and realize the *one fare* objective presented by Mr. Ved Mani Tiwari).

There are several tasks on the tactical level that have to be done during the first phases before the metro opening as well. It rather concerns the design of the network, i.e. the reorganization of the bus network in order to avoid overlapping (*one network*), but also the implementation of IT based control system that would allow the future UMTA to offer an integrated timetable to its users (*one timetable*). The ticketing system based on smart cards will have to be developed alongside the tariff policy.

All those actions are represented by a symbolic milestone on the illustration page 18. Contrary to the first timeline drafted by KMRL, it is advised here to launch actions along different steps. Many of them should be done before the metro runs whereas some others can wait before being launched. This concerns for instance the integration of non-motorized modes of transport within the global transport system. This kind of action has to be leaned on the Master Plan. Thus the UMTA legislation, the Master Transport Plan and the CMP have to be approved before those kind of operational actions such as the pedestrian and bike integration (and mainly all the tactical and design level). Parking policy is also an action that can be done on a long term planning.

The workshop brought up new major actions to be included in the UMTA roadmap such as Data collection and Traffic management. They still have to be more specifically detailed but they are already integrated in the timeline. Data collection should be conducted before the metro opens in order to get a realistic vision of the traffic situation. It will help to manage and maintain the entire network after the metro opening so that the entire system works in a perfectly integrated way.
<table>
<thead>
<tr>
<th>Strategic level</th>
<th>Preparatory phase</th>
<th>Metro Opening</th>
<th>On Next (what comes after)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reorganization of Bus Network</td>
<td>Analysis of overlapping bus routes and water transport</td>
<td>Dialogue with Bus companies</td>
<td>Creation of SPV</td>
</tr>
<tr>
<td></td>
<td>Bus procurement</td>
<td>Implementation of Feeder buses and boats services</td>
<td>IT based control (Action V)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20. Engagement of a consultant for development of IT solutions for monitoring, control, integration of all modes of transport and for vehicle technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>21. Preparation for the concept paper on implementation of IT based control, monitoring and integration of all modes of transport</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22. Implementation of IT based control, monitoring and integration of all modes of transport</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>23. Commissioning of Central Control Room for control and monitoring of all modes of transport</td>
</tr>
<tr>
<td>Master Plan Transport (Action IX)</td>
<td>15. Engagement of a consultant for preparation of Master transport plan and setting up a training institute for operators</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19. Adoption of Master Transport Plan / CMP</td>
<td></td>
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</tr>
<tr>
<td>Urban Transport Fund (Action VII)</td>
<td>29. Engagement of a consultant for preparation of policy document for consolidation of funding requirement for all modes of transport and creation of UFT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30. Discussion with all the relevant departments regarding creation of UFT and consolidation of budget</td>
<td>31. Creation of UFT</td>
<td></td>
</tr>
<tr>
<td>Tariff policy (Action VIII)</td>
<td>32. Engagement of a consultant for preparation of integrated tariff policy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>33. Preparation of draft integrated tariff policy</td>
<td>34. Adoption of integrated tariff policy</td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
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<tr>
<td>Traffic management</td>
<td></td>
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</tbody>
</table>

**Main Milestones**

- **Legal framework (Action I):**
  1. Preparation of the draft UMTA legislation
  2. Circulation of the draft UMTA legislation for comments
  3. Meeting with all concerned departments to discuss draft UMTA legislation
  4. Preparation of modified draft UMTA legislation
  5. Submission to the Department of Transport, the GoK
  6. Cabinet approval of the draft
  7. Approval of the Assembly of Kerala for the UMTA legislation

- **Urban Transport Fund (Action VII):**
  29. Engagement of a consultant for preparation of policy document for consolidation of funding requirement for all modes of transport and creation of UFT
  30. Discussion with all the relevant departments regarding creation of UFT and consolidation of budget
  31. Creation of UFT

- **Master Plan Transport (Action IX):**
  15. Engagement of a consultant for preparation of Master transport plan and setting up a training institute for operators
  16. Preparation of Master Transport Plan / Revision of CMP
  17. Stakeholder’s consultation and for private sector participation

- **Urban Transport Fund (Action VII):**
  29. Engagement of a consultant for preparation of policy document for consolidation of funding requirement for all modes of transport and creation of UFT
  30. Discussion with all the relevant departments regarding creation of UFT and consolidation of budget
  31. Creation of UFT

- **Tariff policy (Action VIII):**
  32. Engagement of a consultant for preparation of integrated tariff policy
  33. Preparation of draft integrated tariff policy
  34. Adoption of integrated tariff policy

- **Data collection:**

- **Traffic management:**

- **Reorganization of Bus Network:**
  Analysis of overlapping bus routes and water transport
  Dialogue with Bus companies
  Creation of SPV
  Bus procurement
  Implementation of Feeder buses and boats services

- **IT based control (Action V):**
  20. Engagement of a consultant for development of IT solutions for monitoring, control, integration of all modes of transport and for vehicle technology
  21. Preparation for the concept paper on implementation of IT based control, monitoring and integration of all modes of transport
  22. Implementation of IT based control, monitoring and integration of all modes of transport
  23. Commissioning of Central Control Room for control and monitoring of all modes of transport

- **Integrated Time Table (Action VI):**
  24. Engagement of a consultant for preparation of the integrated time table
  25. Preparation of the draft paper for consultation with RTOs and for Transport authorities regarding integration of timetable
  26. Discussion with bus operators and water bus operators regarding integrated time tabling
  27. Finalization of the integrated time tabling
  28. Notification of the integrated time table

- **Smart Card (Action III):**
  12. Engagement of a consultant for implementation of Smart Card based ticketing system
  13. Preparation of policy for implementation of Smart Card based ticketing system
  14. Discussion with all the stakeholders for implementation of Smart Card based ticketing system
  15. Implementation of Smart Card based ticketing system

- **Parking policy (Action II):**
  8. Engagement of a consultant for preparation of Parking Policy
  9. Preparation of Parking Policy
  10. Stakeholders consultation on Parking Policy
  11. Implementation of Parking Policy

- **Pedestrian and bikes integration (Action IV):**
  16. Engagement of a consultant for developing options and strategies for revival of non-motorized modes of transport, including cycling
  17. Preparation of concept paper on revival of non-motorized modes of transport, including cycling
  18. Stakeholder’s consultation
  19. Implementation of the plan for revival of non-motorized modes of transport, including cycling
The two-day workshop in Kochi aimed at preparing a road map for its future UMTA. It was successfully achieved thanks to a good participation of all the stakeholders present during the workshop. Sharing a same vision with all the stakeholders contributed to identify the roles expected to be fulfilled by the future transport authority. The road map specified the priority actions for UMTA Kochi and rose up several issues that have to be fixed.

A timeline was proposed according to the metro timeline. M. Elias George pointed out a short list of tasks that need to be done by the time the metro runs: the administrative setting, the implementation of the control room, the financial setting, an IT system and a standardization of transport supply.

The main objective of the UMTA is to restructure the transportation system into a more passenger-friendly manner i.e. to implement an integrated system of all modes of transport. The project plans to make all types of transport operating through a single wide transit system.

To do so, it is important to remind that the key of UMTA's success will remain in the coordination of the various agencies of the transportation sector. The biggest challenge in the implementation of UMTA is to bring all the stakeholders under the same umbrella like M. Elias George said. A special thank was addressed to CODATU and AFD team for bringing participation during the UMTA implementation process. Mr. Xavier Hoang, AFD member, concluded the workshop by reminding that other stakeholders who were absent during the workshop should not be forgotten. All the transport associated stakeholders must be included in the discussion and process in order to provide the best integrated system.
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