Tramways as sustainable masstransit systems: Ex-post evaluation of Moroccan tramways

November 10th | 15:30-17:30 CET













Welcome to this year's Mastering Mobility Series!

- ✓ Learn
- ✓ Exchange
- ✓ Connect

02.11.2021	Data types and data collection methods for an urban mobility diagnosis	
10.11.2021	Tramways as sustainable mass-transit systems: Ex-post evaluation of Moroccan tramways	
16.11.2021	Understanding air quality and its role in urban transportation	
23.11.2021	Integrating air quality into sustainable mobility planning	
29.11.2021	Reforming paratransit with MobiliseYourCity's newest catalogue of measures	
30.11.2021	Getting to know your potential: Conduct a financial assessment of your city	
07.12.2021	Reflecting about barriers and co-creating solutions for active and walkable cities	





Agenda

15:30	Introduction to today's session	16:30	Break	
	Vincent Larondelle	16:35	Roundtable with Moroccan counterparts, including Q&A	
15:35	Introduction by country directors		Ambrosius Baanders, Essaid Fraigui, Loubna Boutaleb, ShadaTaib	
	Mihoub Mezouaghi	17:15	Wrap-up: What can we learn from the Moroccan tramways?	
15:40	Poll		Antoine Chèvre	
	Vincent Larondelle	17:25	Wrap-up and participant feedback Vincent Larondelle	
15:45	Introduction to Rabat's and Casablanca's tramways Loubna Boutaleb, Shada Taib			
16:00	Ex-post evaluation of Moroccan tramways			
		1		



Thomas Delahais

Objectives of the session

- Understand the role of tramways as sustainable mass transit systems
- Learn about the economic, social and environmental benefits of tramways
- Reflect on lessons learned from Moroccan tramways and apply them to your own contexts



Meet the speakers and facilitators of today's session



Speaker
Ambrosius Baanders
Independent Consultant
Former Board Chair at
Association for European
Transport



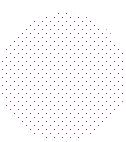
Speaker
Loubna Boutaleb
Managing director
Société du tramway du rabatSalé



Speaker
Mihoub Mezouaghi
Country Director
Agence Française de
Développement (AFD)



Speaker
Antoine Chèvre
Transport Team Leader
Agence Française de
Développement (AFD)



Speaker
Shada Taib
Communication Manager
Casa Transport

Moderator
Vincent Larondelle
Monitoring and Evaluation
MobiliseYourCity



Speaker
Essaid Fraigui
Fonds d'Accompagnement des
Réformes du Transport (FART)



Speaker
Thomas Delahais
Consultant and evaluation expert
Quadrant Conseil











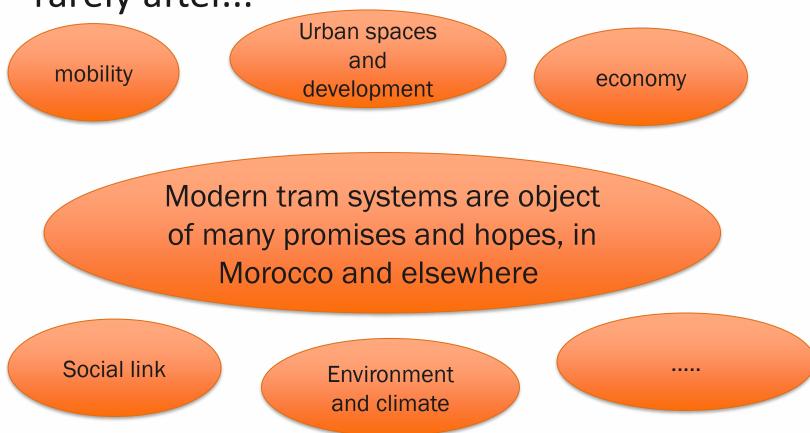


AFD-STRS-CASA Transports 10 novembre 2021



THE FIRST IMPACT EVALUATION OF TRAMWAYS BY THE FRENCH DEVELOPMENT AGENCY AFD

 In transport, we often evaluate before, more rarely after...



TRAMWAYS IN CASABLANCA AND RABAT-SALÉ: AN ENORMOUS INVESTMENT TO PROMOTE SUSTAINABLE MOBILITY



- Rabat-Salé (2Mh): a link between two neighboring, but socially and economically very different cities
 - 2 lines with a length of 17 km opened in 2011; 7km extension (2021); operator: Transdey
 - Costs: 500 M€
 - Frequency: ~110 000 pax (pre-COVID)
- Casablanca (>4Mh): 1st structuring line in the Moroccan metropolis
- Line 1 opened in 2012; line 2 (2019), lines
 3 & 4 in construction+ BHNS; operator:
 Ratp Dev
 - Costs: >1,000 M
 - Frequency: ~120 000 pax (pre-COVID)



WHY CASABLANCA AND RABAT-SALÉ?

- Insights draw on nearly ten years of experience
- Arrival of a tramway in a similar context :
 - Growing metropolises
 - Dysfunctional bus networks, important role of taxis and informal modes in compensation
 - A common institutional scheme
- Common observation of successful projects AFD / STRS / Casa Transports deserving an evaluation to better understand the impacts and mechanisms

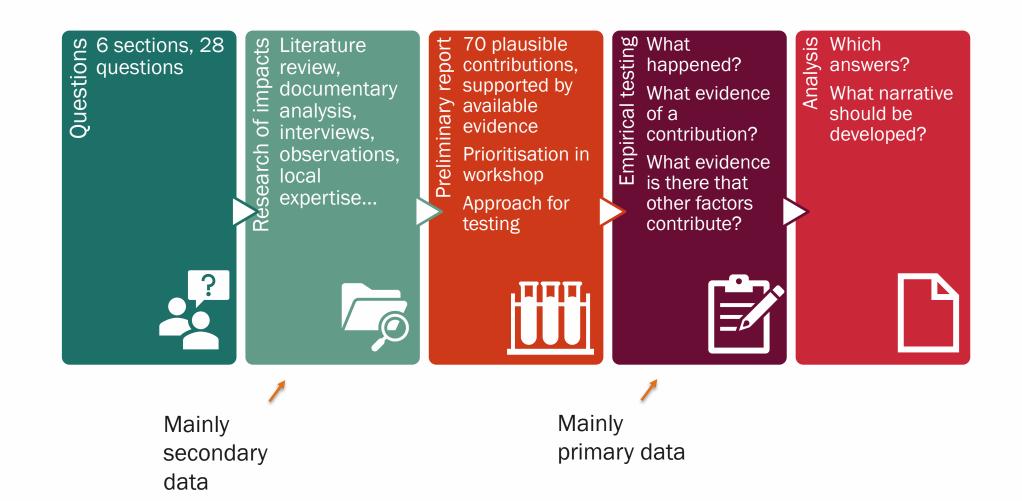


APPROACH TO EVALUATE TRAM IMPACT

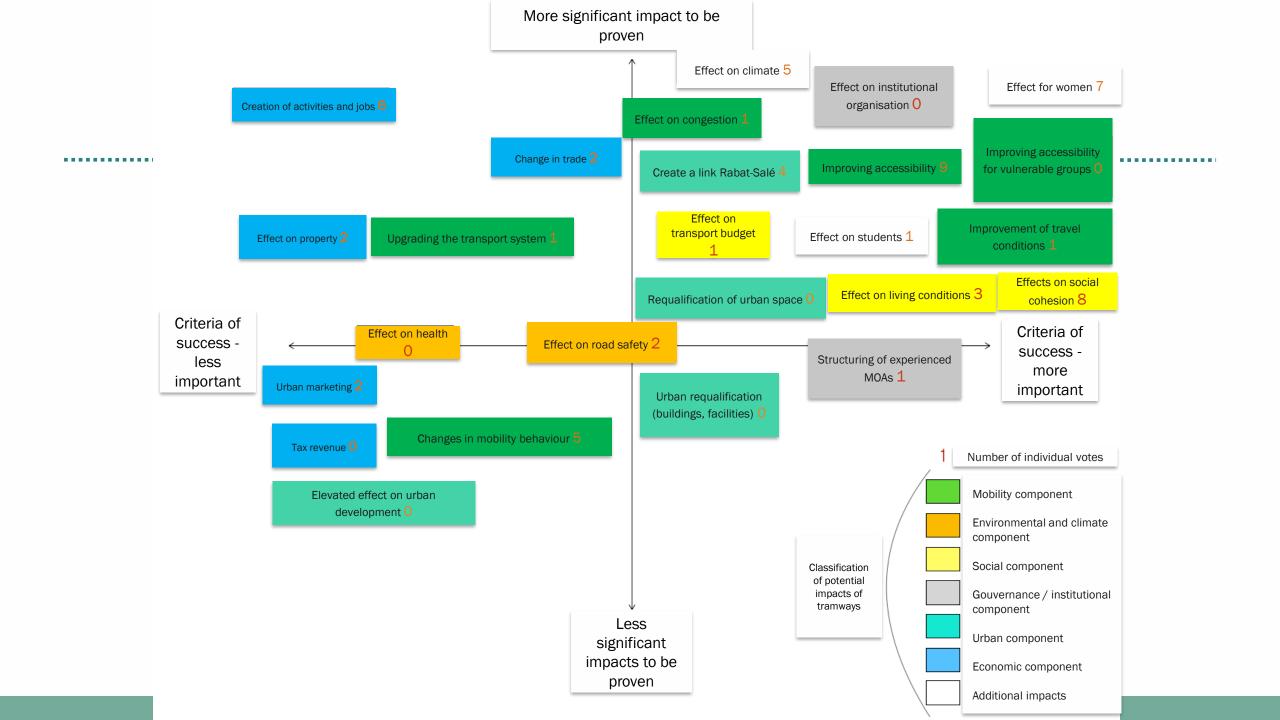


- Systemic promise of trams: changing mobility but not only...
- It is not the infrastructure that has an impact, it is the way the actors deal with it:
 - Importance of service and implementation in general
 - Why and how different types of users enter?
 - Essential role of political, administrative and socio-economic actors in achieving impacts

DEVELOP PLAUSIBLE CONTRIBUTIONS AND TEST THEM







COLLECTING INFORMATION FROM AS MANY PEOPLE AS POSSIBLE



Key sources:

Household Travel Survey Casablanca 2018

Census 2014 with the help of the Haut Commissariat au Plan



Contribution of 4 Moroccan and 2 European experts



Interviews with 235 people in the vicinity of stations: women, people with disabilities, students, new residents (incl. non-users or occasional users)



30 interviews with key stakeholders



Survey of 1,600 users, of which 200 in depth



Interviews with 165 businesses, companies and administrations

LIMITED GAINS IN TERMS OF ACCESSIBILITY TO KEY JOBS AND SERVICES...



Residents:

- Could already get around the centre rather quickly with taxis!
- Avoid uncertain bus connections
- The most important gains:
 - On the Rabat-Salé link between the two urban centres
 - For routes located in a "major corridor" of the tramway
 - In Casablanca, eastern branch: Sidi Moumen, Moulay Rachid

WHAT ADDITIONAL PROPORTION OF JOBS DO RESIDENTS HAVE ACCESS TO?

• **INDICATOR**: Weighted average accessibility gain in a given territory

TRAMWAY FROM CASABLANCA	Population/ employment	Average accessibility in less than 40 minutes without tram → with tram	Restriction related to the use of "no connection" CT	Restriction on journeys that do not
Grand Casablanca	4,3 Mh, 1M+ employment	51% → 53% (+2pts)		increase in cost in the project
Prefecture of Casablanca	3,3 Mh, 900 000 employment (est.).	66% → 69 % (+2,9pts)	62% → 65% (+3,4pts) Travel in the Greater	57% → 58% (+1pts)
* ************************************	1,8 Mh, 460 000 employment (est.)		Corridor 62% → 71% (+9pts))

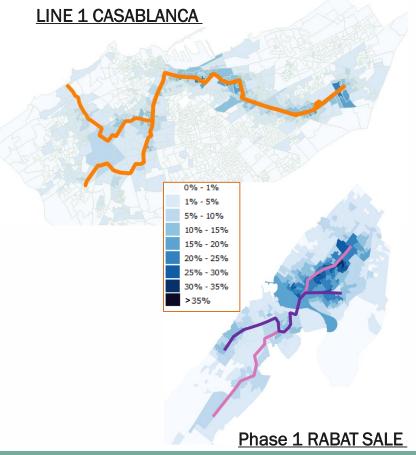
TRAMWAY FROM RABAT-SALE	Average accessibility within 30 & 50 min.
Rabat (30min)	30% → 36 % (+6pts)
Salé (30min)	23% → 24 % (+1pts)
Salé → Rabat (50min)	27% → 33 % (+6pts)
Rabat → Salé (50min)	19% → 25 % (+6pts)

... BUT TRAMS HAVE FOUND THEIR AUDIENCE

	Tram share (total agglomeration)		Tram share (for inhabitants of the catchment area*)		
	Home Work	Home Study	Home Work	Home Study	
Rabat	1,6%	7,8%	9,8%	28,8%	
Salé	5,0%	16,6%	25,1%	34,9%	
Casablanca	2,1%	4,2%	12,6%	12,6%	

- → Attractive tram especially for the population near the stations
- → High tram modal share: DT Salé and DT/DE Rabat+Salé

MODAL SHARE OF TRAMS FOR HOME-WORK PURPOSES BY RESIDENCE (HCP, 2014)



Share of work (WT) - study (ST) trips - (HCP 2014)

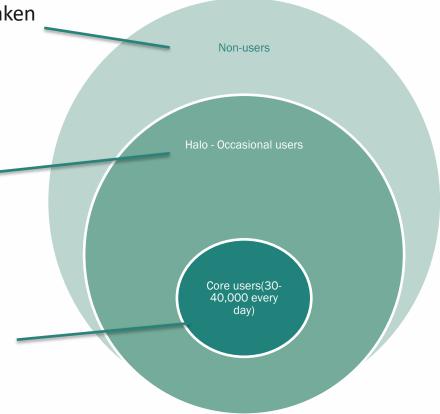
THREE LEVELS OF USERS

1/3 of Bidaouis have never taken the tram (2018)

1/3 of Bidaouis take the tramway at least once a week (2018)

~ 2/3 of the attendance

Working people, students, massively subscribed, regular users for years



86% of users intend to continue using it

THE TRAMWAYS NOW HAVE REGULAR USERS



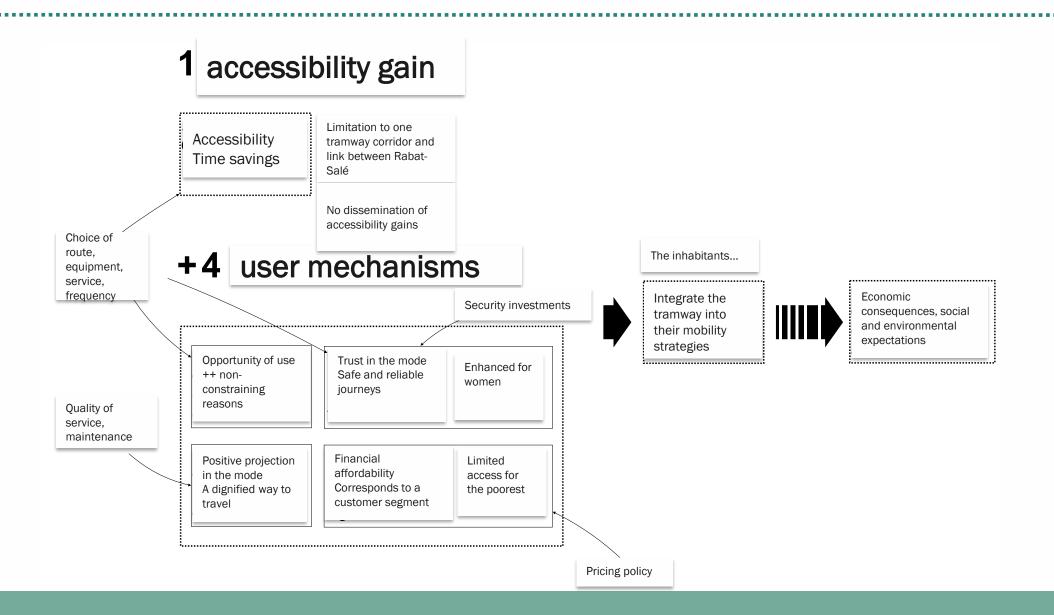
- Users are willing to make long journeys to avoid other modes and connections
- The tram replaces large taxis, buses and cars as passengers...
- But it is also the initial mode for > 1/3 of trips!
- The tramway has made it possible to maintain the share of public transport despite the collapse of the bus networks and to give a new impetus to public transport

WOMEN AS AN EMBLEMATIC AUDIENCE



- 50% of passengers are women, although they are less mobile and less active than men.
- Women prefer the tram to go to work:
 - +70% in Casablanca compared to men
 - +150% in Rabat-Salé
 - Ready to walk more to reach a tram station
- For women, the tramway replaces in particular large taxis (-10 pp) and the car as a passenger (-9 pp)
- More occasional use for more reasons (health, relatives, shopping, leisure...) in more new areas
- The result: in the catchment area, 13.5% of women use the tramway compared to 7.5% of men (Casablanca)

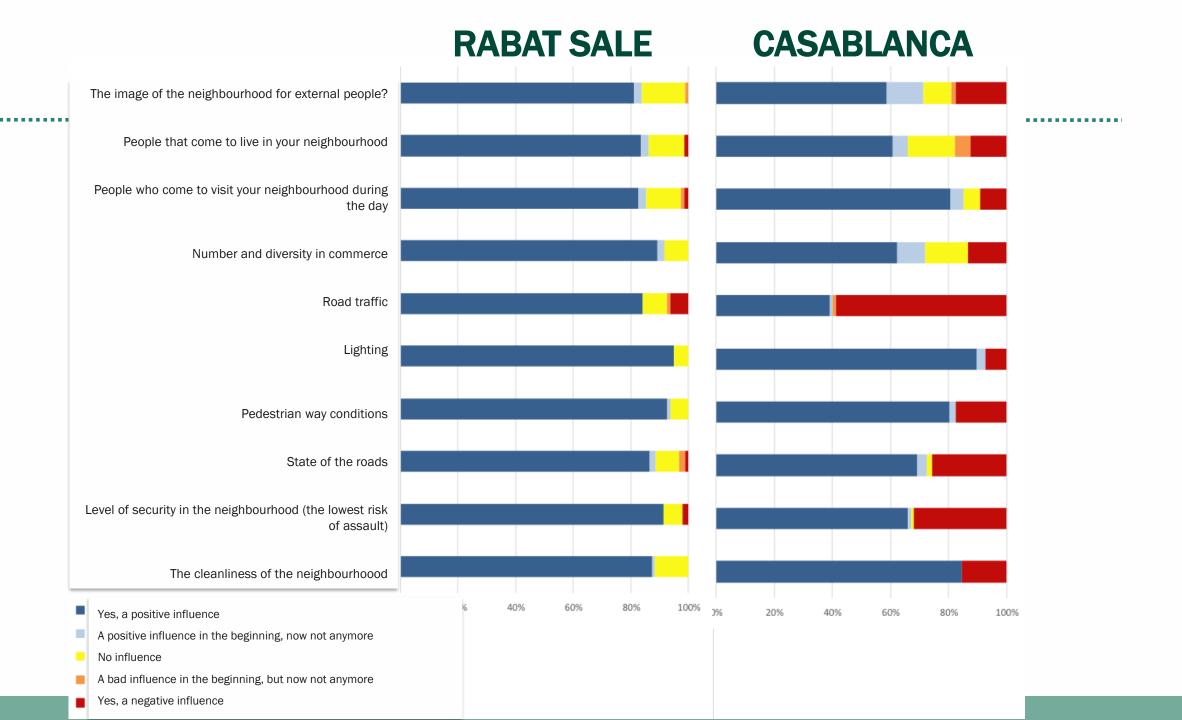
KEYS OF SUCCESS



THE TRAMWAY AND THE URBAN SPACE



- Re-qualification of the areas near the tramway, more pleasant to walk around, safer
- A projection of the modern city (pedestrian, airy, etc.) that also concerns working-class neighbourhoods
- Positive consequences for the neighbourhoods crossed by the tram:
 - Walkability, especially in Casablanca
 - Consequences on the neighbourhoods appreciated, especially in Rabat-Salé



CONCLUSIONS





IT IS POSSIBLE TO CARRY OUT STRUCTURING PROJECTS

- Successes of the project-based approach:
 - Tram projects completed on time and on budget
 - Tramway operations are almost break-even (revenues cover operating expenses), which is an exception for mass transit systems
 - Establishment of **high-level ad hoc project management** and validation of the Local Development Company (LDC) model
 - Strengthening of a "technical governance of mobility".
- But there are also limits:
 - Little consistency with mobility, urban, economic and environmental policies...
 - ... which limits the possible impacts of the tramway

TOWARDS WIDER URBAN RECONFIGURATIONS?



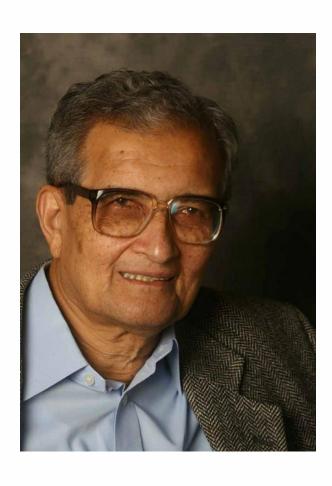
- Little consideration of the tramway by real estate or economic players, but...
- The core group of users are looking for a job (41%) or a home (43%) along the tramway: Maximisation of gains:
 - travel time, safety, quality of space, lighting, etc.
 - No purchase of a car or a second car
- The next logical step: the reconfiguration of businesses and shops...
- How to accompany this reconfiguration with adapted policies?
- Moving from Salé → Rabat to Rabat ← Salé?

TOWARDS SYNERGY EFFECTS



- The first stage of wider, multimodal, more reliable networks, with adapted urban mobility governance. Casa Transports and STRS have successfully led the development of tram and bus networks for the past 10 years.
- Key aspects for the future:
 - Everyone takes the tram
 - The inhabitants trust the tramways
 - They see themselves as if they were in a car
- Impact of line 2 in Casablanca :
 - Increase in ridership and and almost break-even on both lines
 - Capacity gain for the whole network
- Challenge of multimodal networks: spread confidence in the tramway mode to the bus network

A DIGNIFIED MODE OF TRAVEL RECOGNISED AS SUCH BY THE POPULATION



- A sense of hogra that the bus networks were a symbol of for many
- Amartya Sen: Development investments should be judged by how they empower people to improve their own lives through their own choices and regain self-esteem.
- The tramway :
 - A major investment by the authorities for the benefit of the working and middle classes
 - A "new normal" reflecting that of the rich countries: comfortable, silent, odourless
 - A place to live together corresponding to the Moroccan ideal of society: social diversity, civility
- Because it allows people to travel with dignity, the tramway thus appears to be a long-term tool for Moroccan development



Thank you for your attention

Keep in touch



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